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THE PREVENTION OF PUERPERAL FEVER.

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The crowning glory of Semmelweiss' theory of puerperal fever, as aptly remarked by Kucher (Puerperal Convalescence and the Diseases of the Puerperal Period, p. 234. J. H. Vail & Co., New York, 1886) is the chapter on prevention. In the fifteen minutes allotted to this topic by the directors of the present discussion, it is possible only to give the briefest outlines of the subject.

The principles upon which the prevention of puerperal fever depends are few and very simple. As summarized by Credé (Gesunde und kranke Wöchnerinnen. Leipzig, 1886, p. 79) there are only two. They are: 1. Prevent, as far as possible, lesions of the genital tract. 2. Prevent the infection of the lesions that are inevitable.

Let us discuss each of these principles in detail.

1. Prevent, as far as possible, lesions of the genital tract. In every labor, no matter how ideally physiological it may be, there is always some solution of the continuity of the tissues that constitute the genital tract. What is the extent of the necessary puerperal wound? 1. The entire area of the endometrium that contributes to the formation of the decidua, inclusive of the placental site, must be regarded as a wound surface after labor. With the commencement of labor, the ovum is forced downward toward, and into the cervix, so that the mucous membrane begins to be deprived of its epithelium, as deeply as Friedländer's glandular stratum. In the commencement of labor, during labor, and during the early days of the lying-in period, until a new mucosa is formed, the intrauterine expanse is easily accessible to the finger and to the air, and infection is liable to occur at any moment.

2. The neck of the uterus, particularly the os externum, is commonly torn to a greater or less degree, even in physiological labors. The epithelium lining the cervical canal and covering the vaginal portion is always rubbed off to a variable extent by the passage of the fœtus, even in the absence of operative procedure.

3. The vaginal mucosa is apt to be denuded in some degree of its epithelium, by the friction of the passengers. Lacerations of the vulvar orifice and lower vagina are of such common occurrence that they are erroneously regarded by certain observers as necessary events.

The puerperal wound, thus marked out, cannot be prevented, but its limitation to these boundaries can be secured, in the large majority of normal cases, by attention to the following precautions:

1. Let the diagnosis of presentation and position, and of the stage of labor be made, as far as possible, by the methods of physical examination of the abdomen; inspection, *palpation*, percussion and auscultation. Limit to the minimum the number of digital examinations *per vaginam*. The adequacy of the methods of physical exploration of the abdomen, in the absence of all examinations by the vagina, has been fully established by the experience of Credé, Breisky, Litzmann, Halbertsma, Winckel, C. Braun and others. In our own country, Richardson, Mundé, Kucher, Neale, Hoag and others have repeatedly urged the value of these methods.

2. Let the bag of waters rupture spontaneously. The bag of waters and the presenting part—not the presenting part alone—is the physiological means by which the neck of the uterus is dilated. Dr. Henry T. Byford has ably written upon the important function of the bag of membranes in the dilatation of the vagina and vulvar orifice, and forcibly urges its maintenance in an intact state, after disappearance of the cervix, upon this ground. I have never been able to perceive any important action of the nature alleged, nor, on physical grounds, can I conceive such an effect in an important degree to be possible. Nevertheless, I am perfectly willing to accept Dr. Byford's ingenious conclusions, if this notion will influence practitioners to withhold from rupturing the membranes. The intact state of the bag of membranes must be preserved for at least two reasons: 1, to secure perfect dilatation of the cervix uteri; and 2, to prevent the access of air and other carriers of infection to the cavum uteri. This latter important office of the bag of membranes has recently received recognition from Goodell.

3. Preserve the perineum and vulvar orifice. Except in cases of congenital malformation, or infiltration of the tissues as the result of various diseases, the perineum and vulvar orifice can be preserved in every case, either by the plan of so-called support, or by the timely performance of episiotomy. This proposition many of you will not accept, but I must maintain it as a firm conviction, based upon sufficient personal observation and experience, and independent of the unanimous testimony of those whose opinion upon this point is responsible.

But if a laceration of the perineum does occur, or if episiotomy is done, unite the rent in the one case, or the incision in the other, immediately upon the conclusion of labor.

4. Refrain from all those meddlesome, injurious practices, that have for their object the abbreviation of the first stage of labor—such as digital dilatation of the cervix, the exhibition of ergot, even in small doses, and the like.

5. Deliver the placenta by the Dublin method, or by the same plan as it has been described by Credé. Inasmuch as the adequacy of this method has been called in question, within the last six months, by a member of this Society, that alleges an experience of over 2,500 cases in obstetrics, it may not be amiss to add that in 48,249 cases—Vienna General Hospital (Carl Braun. Lehrb. d. g. Gynækologie, Wien., 1881, p. 182) eleven years, 1862–1872—the expulsion of the placenta was effected by Credé's plan in 48,132 cases, or 99.8 per cent.; only in 117 cases, 0.2 per cent., or once in 500 cases, was it necessary to resort to other procedures.

Turn now to principle number two.

2. Prevent the infection of the lesions that are inevitable. Infection of lesions of the genital tract during or after labor occurs in one or other of two modes. 1, contact infection; second, indirect infection, so-called self-infection, or spontaneous infection (Fritsch). In the very large proportion of cases, the carrier of the infection is the finger of the accoucheur or nurse, their instruments, or the napkin, and the cases are examples of contact infection. Reflecting upon such cases, Emmet once drastically remarked, "Many a woman's death-warrant has been carried under the finger-nails of her physician." But the researches of Winckel and Ahlfeld tend to show that a woman may become the subject of puerperal fever without exposure to infection through vaginal examination. Alleged examples of the so-called auto,—self—or spontaneous infection are to be found in Winckel's cases of street labors, and Ahlfeld's cases, in which no vaginal examinations were permitted. Such cases are very rare. The experience of Leopold (Deutsche Med. Wochenschrift, No. 20, May 17, 1888) in particular, shows that in proportion as measures to prevent contact infection are faithfully carried out, just in that proportion do these cases of so-called self-infection disappear. At the Dresden clinic, out of 1,387 cases of labor in 1887, and 1,388 in 1888, 248 cases were neither examined *per vaginam*, nor subjected to vaginal irrigation. In only five, or 2 per cent., were slight symptoms of fever developed. All these cases of so-called auto-infection are in reality examples of infection from without. They receive full explanation in the researches of Döderlein (Arch. f. Gyn., 31 Bd., 3 Hft.) and Kaltenbach (Volkmann's Sammlung klin. Vortr., Nr. 295), and others. The secretions of the cervix and the vagina contain, under normal conditions, pathogenic and non-pathogenic germs, that may gain access to the cavum uteri, or may penetrate into lesions of the cervix and vagina, and cause local, followed by general infection.

In the prevention of the infection of the inevitable lesions of child-birth, it is necessary to bear clearly and distinctly in mind these two modalities, and to concentrate attention upon their elimination. At the present, the fear of the deleterious influence of the atmosphere has abated, just as in surgery (Kümmel. Bedeutung der Luft und Contact-Infection für die pract. Chirurgie. *Arch. f. Klin. Chirurg.*, 33 B. 3 H.) the scrupulous attention paid to the disinfection of the surrounding air in the early days of Lister has relaxed. The specific details observed in the prophylaxis of contact and so-called self-infection of the lesions incident to parturition, due allowance being made for the structural and functional peculiarities of the region, are strictly analagous to, if not identical with the precautions that every surgeon abreast of the times enjoins in the prevention of wound infection in all major and minor operations. The surgeon sterilizes the field of operation, the immediate environment, and everything that comes in contact with the wound; the obstetrician acts under the same principles.

The specific details are:

A. PRECAUTIONS OBSERVED BY THE ACCOUCHEUR AND NURSE.

1. Sterilization of the hands, of all instruments and appliances, napkins, and the like, that are liable to be brought into contact with the genitalia. In the disinfection of the hands, it is necessary to bear in mind the vital significance of subungual dirt, of the exact surgical aspects of which Fürbringer (Untersuchungen und Vorschriften uber die Desinfektion der Hände des Arztes nebst Bemerkungen uber der bakteriologischen Charakter des Nagelschmutzes. Wiesbaden. Bergmann, 1887) has informed us. To sterilize the hands, it is necessary to wash them thoroughly in warm water with soap and a clean nail-brush, remove subungual accumulations and trim the nails with a knife; then dip the hands into an 80 per cent. solution of alcohol (Fürbringer); finally rinse the hands carefully in a solution of corro-

sive sublimate 1:1000. Make the examination before wiping the hands with a towel. In the disinfection of the hands it is well to include the disinfection of the forearm; it is absolutely obligatory in the event of any operative procedure, like version or the forceps operation. A lubricant can usually be dispensed with, although there is no objection to the use of a solution of corrosive sublimate in glycerine, 1:1000. Instruments can be effectually sterilized by being boiled in water for five minutes (Davidsohn). For washing the genitalia, cleaning wound surfaces, for napkins and the like, employ either sterilized absorbent cotton, or sterilized gauze, to the total exclusion of sponges. Pass the catheter, after cleansing the meatus urinarius, by sight, not by touch; use a glass instrument; keep it constantly immersed, when not in use, in a solution of corrosive sublimate in glycerine, 1:1000; you will thus avoid cystitis (Boxall, R.)

2. The important question, "How soon after exposure to sources of infection may the accoucheur or nurse resume the practice of obstetrics?" has received a very satisfactory answer in a paper by French of Minneapolis. Under exposure to sources of infection, be it remarked, we understand exposure to puerperal fever, erysipelas, diphtheria, scarlet fever, pus secreting wounds or surfaces, cadaveric emanations, menstrual and lochial discharges, and the like. In the paper mentioned, French collected the written opinions, of the leading surgeons and obstetricians, whose utterances were at all authoritative upon the point, in this and foreign lands. The weight of opinion was that the lapse of any definite period of time,—say twenty-four hours,—was not an essential condition to adequate disinfection. That a Turkish bath, a change of clothing, and the subsequent disinfection of the hands and forearms might render the individual surgically clean in a much briefer space of time.

B. PRECAUTIONS TO BE OBSERVED WITH REFERENCE TO THE PARTURIENT WOMAN.

1. Before the first examination per vaginam, and before all operative procedures that involve the introduction of the hand or instrument, it is necessary to sterilize as far as possible the pubic hair, vagina, and the accessible portion of the genital tract. Winter, (*Zeitschr. f. Geburtsh. u. Gynäk.*, Bd. xv, Heft. 2) as before remarked, and others have shown that under normal conditions, pathogenic microbes are present in the cervical and vaginal secretions of more than half of all cases; that they are present within the cavum uteri and tubes only when they have been introduced, as by the use of the sound. The possibility of so-called auto-infection is thus demonstrated, even in the absence of the evidence adduced by Ahlfeld, Winckel and others. The difficulty in the absolute sterilization of the canal of the cervix uteri and the vagina is great, almost insurmountable. Steffeck (*Zeitschr. f. Geburtsch. ü. Gynäk.*, Bd. xv, 2 Heft.) concludes a very instructive series of experiments upon this point, in the following words: "A thorough washing out of the lower segment of the cervix and the vagina by the aid of two fingers, and subsequent careful irrigation, with one litre of sublimate solution (1:3000) or 3 per cent. carbolic acid solution every two hours is essential to the sterilization of the parturient passages." Experience, however, teaches that surgical cleanliness of the woman and relative sterility of the parturient canal may be secured:

a. By a full bath in warm or hot water, in which soap is freely applied about the pubic hair, and external gentalia, and

b. By thorough vaginal irrigation with sterilized water, or dilute solutions of sublimate or carbolic acid,

In conclusion upon this point let us bear in mind the fact that sterilization of the parturient passages is obligatory as well in the prevention of opthalmia neonatorum, as in the prophylaxis of puerperal fever.

2. Let the hand follow the contracting uterus, when the head has passed the perineum, and remain upon the fundus until the placenta is expelled, and until retraction of the uterine musculature is secured. Of course, the placenta and membranes must be critically inspected as to their integrity. In case of retention of a bit of placenta,—normal or succenturiata,—the offending fragment must be removed. In case of retention of portions of the chorion or decidua, it is safer to trust to the uterus for its spontaneous expulsion. Small clots of blood, lurking in the cavum uteri, and loitering fragments of the membranes will do no harm, provided they have not been infected.

3. After the completion of labor wash the external genitalia and irrigate the vagina, to remove the detritus, and apply a sterilized napkin. Daily vaginal irrigation during the puerperium is strongly contraindicated in normal cases of labor. Let the external genitalia only, be washed during the lying-in-period.

4. The cavity of the uterus ought never to be irrigated after labor, except in the presence of a distinct indication. When the hand is introduced as in version, when the liquor amnii is discolored as in protracted labors, when the fœtus is dead or macerated, this indication is presented. For the purpose of irrigation, use sterilized water: there is considerable danger of resorption from the use of carbolic acid or sublimate. To effect permanent disinfection of the cavum uteri, use either iodoform or salicylic acid alone or in combination. I give the formulæ as suggested by v. Mosetig-Morhoof in 1881, and by Ehrendorfer still later. (Emil Ehrendorfer, *Leitung der Geburt und des Wochenbettes nach antiseptischen Principe.*)

Iodoformi pulv. 20.0
Amyli 20.0
Glycerine
Gummi Arab. . . . . āā 1.0
Ol. terebinth. . . . . gtt. xx
M. f. bacilli Nr. sex.

Acidi salicyl . . . . . 5.
Amyli.
Glycerine
Gummi Arab. . . . . āā 1.0
Ol. ricini . . . . . gtt. x
M. f. bacilli Nr. decem.

(Schnitzler's Klinische Zeit- und Streitfragen, Wien., 1888.)

Now after disinfection of the cavum uteri by irrigation, and its permanent disinfection by iodoform or salicylic acid, *let the uterine cavity severely alone* for the entire period of the puerperium. More Madden writes in the paper on "Puerperal Fever," read before the last International Medical Congress, "From the first day after delivery until convalescence has taken place, the uterine cavity, as well as the vagina, should be daily washed out with water as hot as can well be tolerated." Such a notion of the prevention of infection is an example of irresponsible opinion, that needs no condemnatory comment. The procedure is barbarous and in utter opposition to the views and practice of those that speak and write with authority upon this subject.

5. It is an axiom in obstetrics that a firmly contracted uterus is well-nigh proof against infection. During the first two days of the puerperium gentle friction of the fundus uteri, twice daily aids materially in securing firm retraction of the uterine musculature, and does not at all interfere with the process of puerperal thrombosis. This practice originated in Carl Braun's clinic. It is more efficient than the use of ergot. Commonly, there is no objection to the use of this drug in addition.

C. PRECAUTIONS WITH REFERENCE TO THE ENVIRONMENTS.

As before remarked, no attempt is now made to disinfect the air. Delivery under the spray and in a tub of water,—a curious Russian device,—have passed into ancient history. The only condition in the environment that we demand is a clean bed, and clean linen; but these are not essential conditions provided the items, already mentioned, have been supplied. It would be better for the parturient woman, if the confinement room had no communication with the sewer, since vitiated air is unwholesome under all conditions of human life. But this is by no means an essential condition. As aptly remarked by Kucher, "I would be less frightened by the bursting of a sewer pipe during labor, than by the use of a suspicious sponge or an unclean rag on the external genitals."

Thus, very briefly I have tried to outline the principles and the practice of the prevention of puerperal fever. To complete the subject of the prevention of puerperal infection, a word ought to be said on the prevention of the infection of the breasts,—mammary abscess,—and upon the prevention of the infection of the new-born; these topics, however, cannot be considered in the space of time at my command.

One word in conclusion. These rules are simple and easy of application as well in private, as in hospital practice; as well on South Halstead Street, as on Calumet Avenue. The evidence upon which they rest to-day is overwhelming, and amounts to absolute demonstration. The proposition that puerperal fever is in every case an example of infection through a lesion of the genital tract, is no longer offered tentatively for your criticism, but dogmatically for your acceptance. It is not within the scope of this paper to offer statistical proof, but if there be a doubting Thomas present, and if he be a sincere, honest seeker after truth, let him look for such figures in the books, for they are there.

A CASE OF ALCOHOL AND TOBACCO AMBLYOPIA; WITH REMARKS.

Read before the Fort Wayne Academy of Medicine, December 6, 1888.

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On September 29, 1887, a gentleman, D. S. by name, æt. 50, consulted me for a defect in his eyesight. He said that for six months his sight had been growing dim, which necessitated a frequent change in his spectacles; that he had tried glasses at all the shops in town where they were for sale, but could not find any with which he could see to read. He then consulted me on the advice of his physician, as the patient thought the eyelids were at fault. He had no pain about his eyes and his general health was good as usual.

On inspection the eyelids showed some slight conjunctivitis of a chronic character, but not sufficient to account for the visual defect. A functional examination showed that his vision for distance was reduced to $\frac{1}{10}$ in either eye, with a greater defect in the left. He could not read Jaeger No. 16 or 2-line great primer with either eye. T. normal; field perfect; ophthalmoscopic examination showed discs white both on temporal and nasal side, with large physiological excavation. No nutrient vessels on disc. The terminal branches of the retinal artery reduced somewhat in both eyes below what I thought might be considered the normal calibre. The veins did not seem to me to be materially reduced. No loss of sensation in the color perception. Patient distinguishes colors by name and assorts them accurately. Recognizing that the optic nerve was undergoing atrophic changes I asked him if he smoked much,

and he said that he used twelve or fifteen cigars daily or their equivalent in pipe tobacco. I then asked him if he used intoxicants to any extent, and he replied that he took a glass of beer occasionally. Knowing, however, the patient's habits, the latter remark was taken with a large grain of allowance, and the equivalent of one gallon of beer was allowed as a margin upon which daily calculations might be based. Being satisfied that alcohol and tobacco were the causes of the changes observed, strict abstinence was enjoined, and hypodermic injections of strychnia sulphas, gr. $\frac{1}{60}$, were made into the back twice daily. At the same time bromide of potassium and iodide of potassium, of each 10 grs., was ordered to be taken three times daily.

On October 4 the sight had increased to $\frac{2}{3}$, and Jaeger No. 14 or great primer could be read with glasses which corrected his presbyopia. The treatment of hypodermic injections was continued till November 4, when the patient's sight for distance was $\frac{20}{20}+$ or above normal; that is, he could read at the distance of 20 ft. what the normal emmetropic eye should read at 20 ft., and most of the next lower line, which should be read by the normal emmetropic eye at 15 ft. As to near vision he could read Jaeger No 1 or diamond type at 15 inches with the glasses that corrected his presbyopia. After about two weeks of treatment with hypodermic injections of the strength of gr. $\frac{1}{60}$, I began using the strychnia of the strength of gr. $\frac{1}{30}$, which was gradually increased to gr. $\frac{1}{16}$.

Since November 4 no strychnia has been employed, but potass. iod. alone in 10 gr. doses was continued.

November 10 patient's vision much the same as on November 4. Have watched patient closely, and am convinced that he has taken no alcoholic drinks and smoked no tobacco. There was no limitation in the field and no color scolomata. It is right to say that patient cannot read readily type smaller than Jaeger No. 4 or minion, because he is unable to see accurately the beginning letter of each word, and must turn his head in different positions to catch the succeeding word when the letters are very small. Pupils respond naturally to light.

The first question, perhaps, which will be asked in regard to this paper is, How do you know that the changes in the optic nerve are due to alcohol and tobacco, and is there anything characteristic in the disc that would show alcohol and tobacco to have caused the peculiarity? I answer that there is nothing distinctive in alcoholic and tobacco amblyopia with consecutive atrophy that enables one to make the diagnosis upon ophthalmoscopic appearances alone. An atrophy of the optic nerve may have followed choked disc or tumor at the base of the brain. If the atrophy have followed choked disc, and the case be seen not too long after the inflammation begins to subside, we will first of all notice that the disc is not well defined, the edges of the circle will not appear as clean cut, but will be frayed a little, and the vessels of the disc will shade over into the tissue of the retina. The arteries will be thread-like, or at least very much attenuated, and the veins distended and tortuous, showing that the return circulation is interfered with. While the connective tissue becomes very much thickened, there is an effusion into the surrounding tissue, which makes the disc very hazy. Vision is usually reduced to a great extent, yet perfect vision may be retained in the early stages of the disease. As the inflammation subsides the disc assumes a creamy tint, the mistiness due to the effusion passes away, and the whitened papilla seems to lie on a plane with the surrounding retina. The later features, then, characteristic of choked disc are illy defined circumference of the disc; tortuosity of veins to a greater or less extent; and pale creamy tint of the papilla.

The disease, when of central origin, is bilateral, and usually both eyes become involved about the same time; or the inception of the trouble in the one eye is followed very shortly by the affection of the other eye. When the cause is within the orbit, of course the neuritis is confined to this side. The onset of the trouble is usually rapid, and a few hours or days may be sufficient to render the patient quite blind. The field of vision is generally affected more or less, and in such cases a certain amount of atrophy may be expected to follow. The state of the pupil depends greatly upon the acuity of vision. When this is not greatly impaired the pupil responds readily, and is of normal size. The pupil may be widely dilated, and quite immovable. Bright subjective lights are usually complained of, and always cause much annoyance and complaint in a sensitive patient. If the patient have much pain of a severe character in the head, and radiating all over the cranium, we may suspect the trouble to be of central origin. Loss of memory, vomiting, epileptoid seizures, giddiness, loss of taste or of hearing, point to the brain as the cause of the trouble. In the large majority of cases of choked disc the origin may be located in the brain.

Absence of all the foregoing symptoms, together with exclusion of orbital tumors, does not imply that we have not to do with an interference with return circulation. Tumors of the brain account for most cases of choked disc, and when the brain trouble is chronic, double choked disc almost always means brain tumor or basilar meningitis with exudation. Complete recovery with good sight does not prove that the gross changes in the brain are not still present. And the fact that we may have optic neuritis without headache and vomiting makes the diagnosis of the cause very perplexing when seen late.

As a rule, optic neuritis ends in complete atro-

phy of the optic nerve and loss of sight; hence the majority of these cases are very doubtful as to the result.

Progressive atrophy of the optic nerve, when seen early, may show some hyperæmia of the disc; but this cannot be asserted positively, since the color of the papilla varies much in normal eyes. Progressive atrophy is characterized by pale, white, or bluish-white discoloration of the papilla, diminution in the calibre and number of the nutrient vessels on the disc, attenuation of the retinal veins and arteries, more especially the arteries, and frequently a peculiar excavation of the nerve. Sometimes the whiteness of the disc is complete and smooth like paper, and again there is a green or bluish cast to the reflection. The circumference of the disc is well defined and sharply cut, as though done with a punch; or the circumference may be a little irregular, yet always clean cut.

In amaurosis of spinal origin the disc is usually green or bluish-green, and by some authors this is regarded as almost pathognomonic. In progressive atrophy the retinal vessels are thread-like and very few; they are short and cannot be followed far on to the retina. Contraction of the field of vision is an important element in progressive atrophy. When contraction of the field has become marked in one eye, and the other eye shows contraction at the same place, we have very positive proof of progressive atrophy.

The causes of progressive atrophy may be found in meningitis, acute and chronic, periostitis and tumors. Locomotor ataxy and chronic myelitis furnish a certain percentage of cases of progressive atrophy. I recall one case of locomotor ataxy that showed beginning atrophy as the first recognized symptom of the major trouble. The eye affection is usually a late manifestation of the spinal trouble, however. Again, loss of vision in locomotor ataxy may be due to paresis of accommodation with no disease whatever of the optic nerve. According to Graefe 30 per cent. of cases of progressive atrophy are due to spinal disease.

If the atrophic process has been going on for some time the prognosis must be very guarded, and the state of the field of vision must be our guide. When the field is affected in both eyes the disease will, in all probability, progress to complete blindness. The interruption in the progress of the unfavorable cases is not long. When the atrophy cannot be traced to any definite cause the prognosis is unfavorable. In those cases in which the field is normal, even though the trouble has existed for some months, and the acuity of vision fallen to one-tenth or one-sixth, we may regard the disease as not due to progressive atrophy, says Wells. He further says that in these cases the vision may not improve.

Upon the history of this case as it is presented, and in consideration of the foregoing, the diagnosis of amblyopia potatorum was made, and in my opinion tobacco also formed an element in the causation. Mr. Hutchinson says in a paper on the subject of "Tobacco Amaurosis:" "The cases which form the subject of this paper are recognized by the loss of blood supply to the optic nerve itself. There is usually not much diminution of the size of the vessels which supply the retina, and often these remain of good size, while the nerve itself is as white as paper. The first stage (one which is usually very transitory, and perhaps often altogether omitted) is one of congestion, during which the disc is too red. Then follows pallor of the outer half of the nerve disc, that part which is nearest the yellow spot. During the stages the patient complains merely of dimness of vision. Everything seems in a fog to him, but he has no pain in the eyes, nor any photophobia or photopsia. In the later stages the whole optic disc has become pale even to blue-milk whiteness; and later still there is proof not only of anæmia of the nerve, but of advanced atrophy. The stages generally occupy from four months to a year. In many cases the patient becomes at length absolutely blind; but in others the disease, having advanced to a certain point, is arrested. There is from first to last no evidence of disease in any structure of the eye-ball, excepting the optic nerve, and even after years of absolute blindness the retina and choroid remain healthy and their blood-supply good."

Romiée regards weakening of accommodation as the first sign of chronic alcoholism. The diminution of sight to one-sixth or below occurring within a limited period of time and simultaneously in both eyes he regards as pathognomonic of alcoholic amblyopia. The nature of the affection he considers to be a diffuse interstitial sclerosis of the neuroglia of the nerve fibres originating in the nerve centres. In the few cases of this kind which have been examined microscopically, the nerve fibres were found the seat of fatty degeneration, and the connective tissue frame-work was hypertrophied. The disease is always bilateral, and in severe cases the patient often complains of persistent colored after-images.

Dr. Alt, of St. Louis, has reported 120 cases of anæmic and atrophic conditions of the optic nerve and retina, which I have made some attempt to analyze. As Dr. Alt says that he had at one time abandoned the use of strychnia in these cases, but upon subsequent trial had resumed its use, many cases were seen but once, which no doubt received a very doubtful prognosis, and were turned away without treatment. Therefore the possibilities that treatment might have offered can not be known. Of the 120 cases there are charged to alcohol and tobacco, 34; alcohol alone, 3; tobacco alone, 7; total, 44, or 36 per cent. As to the time of life during which the noxious influence of tobacco and alcohol seem to be most potent,

the following will give some account: Alcohol and tobacco caused the trouble between 20–30, 5; between 30–40, 9; between 40–50, 15; between 50–60, 10; between 60–70, 1. In seven cases tobacco alone was the cause, and the ages are disposed as follows: Between 20–30, 1; between 30–40, 2; between 40–50, 1; between 50–60, 3. Alcohol alone was responsible in three cases, whose ages range as follows: Between 50–60, 1. between 60–70, 1; between 70–80, 1.

Of those cases in which mention is made of the color-sense, it was impaired in cases of alcohol and tobacco 11 times; tobacco alone, 3 times.

The color-sense usually impaired is that for red and green, as the following will show: Alcohol and tobacco, red 1, red-green 2, green 3, no color-sense 1. In tobacco alone the color-sense was lost for green and red-green. In alcohol and tobacco the field of vision was contracted in 9 cases.

No. 1. Visual field, concentric limitation; acuity, R., $\frac{4}{200}$, L., $\frac{6}{200}$; treatment, ars., pot. iod., strych.; time, 6 weeks; result, none.

No. 3. Visual field, central scotoma; acuity, $\frac{20}{70}$, both; treatment, pot. iodide; time, 2 weeks; result, does not change.

No. 4. Visual field, yellow-blind; acuity, $\frac{6}{200}$, $\frac{20}{200}$; treatment, pot. iod.; time, 4 weeks; result, $\frac{20}{70}$, $\frac{20}{50}$.

No. 9. Visual field, green-blind, central scotoma; acuity, $\frac{20}{100}$, $\frac{20}{200}$; treatment, pot. iod.; time, 1 year; result, color restored, $\frac{20}{30}$, $\frac{20}{20}$.

No. 11. Visual field, green-blind, restricted down and in; acuity, $\frac{12}{200}$, $\frac{15}{200}$; treatment, abst.; time, 2 months; result, none.

No. 12. Visual field, yellow-blind, concent. limited; acuity, $\frac{20}{70}$, $\frac{20}{30}$; treatment, pot. iod.; time, 2 months; result, $\frac{20}{20}$ u.

No. 15. Visual field, limited downward and cent. scot., both; acuity, $\frac{20}{100}$ u.; treatment, strych. pot. iod.; time 18 months; result, blind.

No. 17. Visual field, restricted inward, central scotoma; acuity, $\frac{20}{200}$, $\frac{20}{200}$; treatment, pot. iod.; time, 6 weeks; result, $\frac{20}{200}$ u.

No. 19. Visual field, limited concent. and central scotoma; acuity, $\frac{10}{200}$, $\frac{20}{200}$; treatment, strych., pot. iod.; time, 4 months; result, $\frac{20}{100}$ L.

No. 27. Visual field, color sense impaired; acuity, $\frac{20}{50}$, $\frac{20}{70}$; treatment, strych.; time, 1 year; result, none.

No. 28. Visual field, restricted in and down in both; acuity, $\frac{20}{200}$, $\frac{10}{200}$; treatment, strych., pot. iod.; time, 2 months; result, $\frac{20}{50}$ u. Improved when strychnine was used.

No. 31. Visual field, restricted downward and in, central scotoma; acuity, $\frac{20}{200}$, $\frac{20}{100}$; treatment, strych.; time, 6 months; result, none.

No. 35. Visual field, R., cent. inward and down, L., normal; acuity, $\frac{20}{200}$, $\frac{20}{25}$; treatment, strych.; time, 6 weeks; result, $\frac{20}{100}$, $\frac{20}{20}$. Never drinks.

No. 52. Acuity, $\frac{18}{200}$, $\frac{8}{200}$; treatment, pot. iod., strych.; time, 7 months; result, $\frac{20}{30}$, $\frac{8}{200}$.

No. 53. Visual field, central scotoma; acuity, $\frac{20}{30}$, $\frac{20}{50}$; treatment, strych.; seen once. Saloon keeper.

No. 66. Acuity, $\frac{20}{50}$, $\frac{20}{100}$; treatment, strych.; time, 2 months; result, $\frac{20}{40}$, $\frac{20}{70}$.

No. 71. Visual field, central scotoma; acuity, $\frac{20}{50}$ u.; treatment, strych.; time, 2 mos.; result, $\frac{20}{20}$ u.; never drinks.

No. 81. Visual field, central scotoma; acuity, $\frac{20}{200}$, $\frac{20}{80}$; treatment, pot. iod., strych.; time, 2 months; result, $\frac{20}{70}$, $\frac{20}{40}$.

No. 84. Visual field, central scot.; acuity, $\frac{20}{50}$ u.; treatment, pot. iod., strych.; time, 3 months; result, $\frac{20}{20}$ u.

No. 94. Visual field, central scot.; acuity, $\frac{18}{200}$, $\frac{20}{200}$; treatment, strych.; time, 2 mos.; result, $\frac{20}{70}$ u.

No. 104. Visual field, central scot., R.; acuity, $\frac{20}{50}$, $\frac{6}{200}$; treatment, strych.; time, 6 weeks; result, $\frac{20}{20}$, $\frac{16}{200}$.

No. 105. Visual field, con. limited, cent. scot.; acuity, $\frac{18}{200}$ u.; treatment, strych.; time, 3 weeks; result, $\frac{20}{70}$ u.

No. 106. Visual field, red-green blind, central scot.; acuity, $\frac{16}{200}$ u.; treatment, strych.; time, 8 months; result, $\frac{20}{30}$ u.

No. 107. Acuity, $\frac{20}{80}$, $\frac{20}{70}$; treatment. strych.; time, 3 months; result, $\frac{20}{30}$ u.

No. 108. Visual field, central scotoma; acuity, $\frac{20}{30}$ (?) u.; treatment, strych.; time, 10 days; result, $\frac{20}{20}$ u.

There are a number of cases in this report in which the patient was seen but once, and as the result of whatever treatment instituted was not reported, I have thrown them out altogether. In some cases there was spinal trouble also, and injuries and central troubles, so all such cases were eliminated from my report.

A PRECISE METHOD OF EXCISION OF CLAVICLE, SCAPULA AND HUMERUS.

Read before the Chicago Medical Society, January 21, 1889.

BY CHARLES T. PARKES, M.D.,

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I am induced to present this case to you this evening both because of the rarity of such cases, and because it affords a very good example of the recovery of the human body from terrible injury. I will at the same time show you the specimen, which displays the disease *in situ*, and the amount of affection there was present.

Before doing this operation I, unfortunately, had not inquired very carefully into the subject; had not read much about it, and hence did not know much of the history of the operation, nor the circumstances under which it was adopted. But I have since been enabled to collect a little history of this operation, and will read what I have collected, mainly an abstract from a paper

read before a society in Berlin by Professor Adelmann. These cases come to the attention of the surgeon under three circumstances: first, the operation is done for the surgeon by machinery or some accident previous to the patient coming under his charge; second, the surgeon does a series of operations, removing first one part of the member, then another part, and finally a third or fourth part, until the patient dies of recurrence; and third, the primary removal of the entire extremity as soon as the disease is recognized—the heading under which this case will be placed.

Professor Adelmann addressed the Surgical Society of Berlin, June 4, 1888, concerning the operation for the removal of the upper extremity, together with the scapula and a part or whole of the clavicle. His address contains the history of the operation, placing the date of the first reported case at 1808. The operation was next performed, between 1830 and 1840, five times; between 1840 and 1850, five times; during the next decade, three times; during the next, seventeen times; during the next, thirteen times; and since 1880, twenty-six times; making in all *70* reported cases.

He discusses the statistics of Paul Berger, comprising 51 cases, and his method of operation. Adelmann makes three classes: (1) cases in which the operation was performed after traumatism; (2) cases in which the operation was performed for benignant tumors; (3) cases in which the operation was performed for malignant tumors.

In the first class are 14 cases with 9 recoveries; in the second class, 3 cases with 3 recoveries; in the third class, 50 cases with 24 recoveries. This third class is subdivided into *sarcomata*, of which there were 26; *enchondromata*, 7; encephaloid tumors, 4; the remaining number bearing different names in different languages.

Of the 50 cases with malignant tumor, in 25 the entire operation was completed at one sitting; among these 25 cases there were 10 recoveries. Of the 25 cases having more than one operation each, 19 cases were operated in two sittings with 10 recoveries, 4 cases had three operations each with 3 recoveries. Of 2 cases with six operations each 1 recovered. These recoveries apply simply to the operation itself; deaths from recurrence after healing of the wound are not counted in the statistics. Among the 25 cases in which several operations were performed there are 17 in which the arm was primarily removed, but having recurrence it was found necessary to remove the scapula and clavicle. Professor Adelmann remarks that this should induce us in the future to perform the entire operation at once, as these cases were all seen early, and the chances for radical cure must necessarily have been good. As it was, only 5 of all these 25 cases remained free from recurrence for years after—one after 30 years, one after 20 years, two after 6 years, and one after 3 years.

In the 15 cases of death after one operation, 7 cases were due to the operation or to the low condition of the patient at the time of operation; 2 to shock; 3 to hæmorrhage; 1 to gangrene of the flaps; 1 to purulent pleuritis; and 1 to secondary hæmorrhage.

In 8 further cases in which the wound was entirely or almost entirely healed, the patient died from recurrence, five times in the lungs, the time of recurrence varying from three years to four months after the operation. In view of the frequent occurrence of secondary tumors in the lungs, the author advises careful examination of this organ, and considers an evidence of the presence of tumors in the lungs as a contra-indication for operation. The percentage of recoveries from this operation for malignant tumor is a little less than 50. Many methods of operation have been adopted by the different operators, but the plan of ligating both the subclavian artery and vein primarily seems to be advisable.

I will show the case as rapidly as possible, in order to let the patient get out of the room. You see the wound is healed, except this one spot of granulations. The boy, from his general appearance, is much healthier and stronger than previous to the operation. You will notice that there are quite a number of little pleats here, as if the sawing had not been very well done; there is apparently a superabundance of flap at the upper part which might have been used to close this gap of ulceration. This resulted because I had not a plan in view before the operation and made my flaps a little too redundant, so that when the lower flap was brought in contact with the upper one its fullness caused the foldings during apposition.

This case came before the clinic at Rush Medical College; a boy much reduced from pain, displaying merely an enlargement of the upper end of the humerus, implicating the shoulder-joint. The growth surrounded the bone, but was not uniform in development. Manipulation showed seeming fluctuation, both on the anterior and posterior aspect of the tumor, so much so that friends who sent him supposed that to open an abscess would be all that was necessary. But the appearance of the patient and the general aspect of the tumor rendered me suspicious, and, therefore, I introduced an exploring needle; instead of pus, I got only blood. The exploring needle went through the soft tissues to the bone, calling attention to the fact that there was not only implication of the soft part, but also disease of the bone itself. It seemed evident that it was a case of *sarcoma* of the shoulder-joint itself, probably commencing in the capsule and passing from it to the tissues around it, and that it would be very likely to recur after amputation, or other

simpler operation upon the shoulder-joint. I explained to the father that as it was a malignant tumor the only thing that seemed to me feasible was the complete removal of the shoulder. He consented to the operation.

From the report I have read you will understand that the immediate danger of the operation is hæmorrhage. There is another danger—the introduction of air into the veins as they are divided. In all operations about the large vessels of the neck or axillary space, where the veins are apt to be patulous, there is a source of anxiety to the surgeon from this cause. To overcome these immediate dangers, primarily to any incision for amputation, the circulation must be controlled by ligation of the subclavian artery and vein. This vein contains a large mass of blood and if divided without control of it much blood is lost aside from the danger of the introduction of air. Not having seen the reports of Paul Berger's method, I proceeded with this idea in view, and made the first incision above the clavicle, uncovering the subclavian artery, which was ligated close up to the side of the *scalenus anticus* muscle. The incision was then carried directly over to the top of the shoulder, the same as for amputation at the shoulder-joint. This incision was prolonged to the axillary space and along the line of the axillary border of the scapula. As soon as the axilla was opened the pectoralis major and minor muscles were divided and the axillary vein was included between two hæmostatic forceps and divided—the main trunks of the brachial plexus were then divided. The arm was then drawn over the front of the body and this incision adopted for excision of the scapula—following the spine of the scapula, so that the posterior flap was divided into two portions. These two flaps were dissected off until the posterior part of the scapula was uncovered; raising it from the chest wall, the muscles were divided and the extremity removed. All bleeding points, together with the axillary vein were now ligated and the flaps united.

This operation was not made upon any specific plan. Following the suggestion of Mr. May, who, in the last issue of the *Annals of Surgery*, reports two cases of this operation, I have looked through all the books in my library and have not found any specific method given. It remained for Paul Berger to give a plan for it. He was led to the plan he suggests after several trials upon the cadaver. The quickest and easiest method of doing the operation and securing the blood-vessels is according to his plan of procedure. He makes his first incision from the inner extremity of the clavicle outward to the top of the shoulder, immediately uncovers the clavicle and turns it out of the way; this leaves the subclavian vessels exposed so that they are easily secured. You all remember well as a result of past experience that as the front of the axillary space is uncovered there is always to be seen a ridge across it produced by the raising of loose tissue upon the external thoracic nerve. It is easily found, and I call attention to it because passing outwards this nerve leads directly to the interval between the artery and vein, and hence to them. With the clavicle out of the way the vessels are superficially situated, easily isolated and free from diverging branches. The artery should be tied in two places, an inch apart, and divided; and the vein also; then the circulation is absolutely under control. May advises that just before the vein is tied the arm should be elevated for a few minutes to allow the venous blood to drain from it, thus saving as much blood as possible for the patient. In my second case I applied the Esmarch bandage up to the axilla. As soon as the arteries are secured in this position, by a rapid cut with the scissors, the brachial plexus can be divided and the pectoralis major and minor be severed.

The flap portion of the operation is done in this way: Commence at the center of the anterior incision and carry the knife directly across the anterior part of the axilla and inner arm to the lower angle of the scapula; then from the outer edge of the incision, posteriorly, carry the knife behind the joint to the same point; rapidly reflect the posterior flap; then all the muscular attachments should be divided and the extremity removed without any trouble. This gives a perfectly even anterior and posterior flap, coming together easily and nicely, and avoids the unseemly appearance of the anterior part of this wound which was caused by the too redundant anterior flap.

This operation was done six weeks ago, and after the first few days there was no time when we felt particularly anxious about the patient's recovery. The patient's perfect recovery has been interfered with by an accident, the effect of which you notice, the sloughing of the flaps, leaving this ulcer. In dissecting up the flaps one is compelled to keep close to the surface, diminishing greatly the nourishment of this immense piece of skin. The danger is increased if the post-scapular artery is wounded; so it is necessary to bear in mind the direction of these incisions in order to secure as neat a stump as possible.

Prof. Adelmann's goes on to show that an artificial extremity can be applied to these cases, which overcomes the lack of symmetry, and which can also be made quite useful.

The second case came in about two weeks after this first, demonstrating the assertion that all cases come in couples. A man 37 years old came in one afternoon, with a tumor on the top of his shoulder, occupying the situation of the supraspinous fossa. It had all the indications, so far as external appearances, of a fatty tumor. A surgeon in charge of a clinic labors under this

disadvantage in all his cases; he has no opportunity for previous examinations, and hence is apt to go into a case without as complete an examination as it is entitled to. This tumor was examined hastily and the history hastily passed over, and the suggestion made that, in all probability, it was not a fatty tumor but, from the rapidity of its growth, would prove to be malignant, and that it was connected with the superficial tissues of the spinous fossa. As soon as the incision was made and it was exposed we saw the mistake. It proved to be a tumor that grew primarily from the shoulder-joint, and particularly from some part of the capsular ligament, crowding out from beneath the supra-spinous fossa and developing as large as a cocoa-nut upon the man's shoulder. The man had not consented to so radical an operation as entire ablation of the upper extremity, so only a temporizing operation was done; the removal of the tumor so far as external manifestations were concerned. He afterward had the nature of the growth explained to him and, after consulting with his friends, decided, in about three weeks, to submit to the operation. It was done; but he died fifty-six hours after the operation. He was slightly shocked by the operation, but recovered from that and for twenty-four hours was quite well, with only a slight elevation of temperature and pulse; he was then taken with delirium and died in a comatose condition.

I do not know exactly what was the cause of death, but I am inclined to think that it was poor policy to do this severe operation so soon after the primary interference. The man was still depressed and in great fear of the severity of the second operation. All these facts were against him. In this case the operation, after the method I have described as advocated by Paul Berger, I am sure was more quickly done, and with more satisfaction to the operator and, if he had lived, to the patient.

This second case properly comes under the head of secondary operations.

It is quite noticeable from the report read that the cases done by machinery are all reported as recovering, and it is questionable whether they have a place at all in the classification of this operation; because the deaths after such accident are not reported at all.

THE PRESENT STATUS OF BACTERIOLOGY.

BY GEORGE MINGES, M.D.,
OF DUBUQUE, IOWA.

From the time of the first discovery of bacteria by Leeuwenhoeck during his examinations of saliva in 1675, bacteriology made no progress until about the middle of the present century, when Ehrenberg described several varieties of microörganisms, and Cohn, recognizing in these minute beings the lowest forms of the vegetable kingdom, classified them into bacilli, micrococci, and spirilla.

Although Pollender, in 1849, described fine rod-like formations as occurring in the blood of animals dead of anthrax, to Davaine (1863) belongs the honor of having first proven the causal connection of these bacteria with the disease, and we must therefore recognize in the latter the first discoverer of a pathogenetic microörganism. Then followed the well-known experiments of Pasteur and his school on anthrax and chicken-cholera, but still the advances of this new science were slow.

Bacteria had now been discovered in the blood and secretions of diseased animals, but they could not be demonstrated in the organs. Well-planned experiments had determined the exact conditions favorable or otherwise to the development of these minute organisms, and the wonderful resisting power of the spores had been demonstrated. The harmlessness of the diseased blood when the bacteria had been removed by filtration was known. Cultures had even been made, but it was almost impossible to prevent unwished-for guests from entering the test-tubes and contaminating their contents. The hay-bacillus was known, but with the imperfect methods then in use, it was difficult to distinguish it from the anthrax-bacillus, and hence arose the false and dangerous doctrine of the transformation of species, which caused good observers to teach that the former, perfectly innocuous though it is, could, under certain conditions, take on the virulent properties of the latter.

These difficulties were dissipated almost at one stroke when the wonderful genius of Robert Koch popularized the use of the homogeneous immersion, when it gave us his improved methods of isolated staining of bacteria in the tissues, when it pointed out the correct way of using the Abbé condenser to wipe out the "structure-picture," and bring into bold relief the "color-picture" when it devised the solid culture-media, the boiled potato, the meat-peptone-gelatine, the agar-agar, the blood-serum. Now we can take a fluid containing a dozen different varieties of microbes, plate it out, so that as many different kinds of colonies spring up peacefully side by side, each containing only one kind of bacteria, and finally we can transplant a colony of each kind into a separate test-tube, where it will develop into a pure culture, and we can then study at leisure its distinguishing characteristics as to rapidity of growth, shape of colony, demand for or abhorrence of oxygen, formation of gas, color, odor, liquefaction of gelatine, etc., and when we inoculate an animal with such a culture, we know that we are experimenting with only one kind of microörganism. Can we help admiring that rare combination of brilliant genius, impartial self-criticism, and unerring judgment,

which has thus far always allowed Koch to triumph over his opponents?

We now know that the theory prevalent only a few years ago, that bacteria occurred everywhere, even in the normal blood and secretions, was erroneous. Only in those cavities of the body which communicate with the external air do they occur under normal circumstances. The mouth, nose, intestinal tract, vagina, contain them in great abundance, but the uterus and bladder are free. Even in the puerperal state, when there is no fever and the hand or instruments have not been introduced into the uterine cavity, no bacteria are found above the internal os. Wherever there is decomposition, bacteria are found, but in dry gangrene, when there is no wound to admit them, they are absent in the dead member.

Now as to the pathogenetic bacteria, Koch demands a microörganism to fulfill the following three conditions before it can be with certainty recognized as the cause of a disease: 1. It must always occur in that disease; 2. It must be found in no other disease; 3. Inoculations with pure cultures must always produce that disease. In certain affections of the lower animals, these three conditions are fulfilled, as for example, anthrax, chicken-cholera, malignant œdema, septicæmia of mice, septicæmia of rabbits. It is different with the infectious diseases of our own race. But few of our contagious maladies are transmissible to the lower animals, and experiments upon man cannot often be made.

Among the infectious maladies common to man and the lower animals are wool-sorters' or ragpicker's disease and tuberculosis. The former is identical with the anthrax of the herds and occurs among those who handle cattle or their products, such as butchers, drovers, wool-sorters, tanners, comb-makers, etc.

Tuberculosis is very common among our domestic animals, cows, horses, rabbits, guinea-pigs, cats, and may also occur in fowl, but rarely in dogs or goats. The cause of this disease has been demonstrated with almost as much certainty as Euclid's celebrated "pons asinorum." Koch's original culture of 1882, has been inoculated from tube to tube, so that last year it had reached the 82d generation, and this last culture, which could not contain a trace of the original caseous matter, was just as virulent to animals as the first. We may not hope to realize the sanguine hopes of enthusiasts of finding a remedy which is a potent poison to the bacilli, and at the same time innocuous to their host; but the discovery of the bacillus tuberculosis is of importance in the diagnosis and the prophylaxis of the disease. "Without bacilli no tuberculosis." The writer has himself been able to diagnosticate tuberculosis from examination of the sputa when physical signs were still negative; and we can all appreciate the importance of recognizing the disease in its earliest stages. This discovery has also demonstrated the identity of tuberculosis in man, cattle, the ape, the fowl, the guinea-pig, the rabbit, although the gross pathological changes are alike in no two of the animals mentioned. Although on account of the great diffusion of this dread scourge in the animal kingdom, we can never hope to totally eradicate it, we can, nevertheless, by destroying the bacilli contained in the sputa with boiling water, by boiling all cow's milk, by making it a penal offense to sell infected meat, by killing all tuberculous cats, fowl, etc., restrict its ravages to a minimum. The experiments of Cornet show that infection with tuberculous sputa could generally be avoided with ordinary care. In almost 400 inoculations with the dust of rooms inhabited by tuberculous patients, he found that when patients expectorated only into vessels, the dust was harmless, while when the sputa were also deposited in handkerchiefs and upon the floor, the dust of remote parts of the chamber contained dried bacilli, and killed the animals.

In 1883 Koch described a comma bacillus which, in its relations to Asiatic cholera, fulfilled the first two conditions demanded by the discoverer. Then there arose a powerful opposition. It was urged that the bacilli never occurred in the blood, while the symptoms of the disease pointed to a grave systemic affection. Koch's explanation was that the constitutional symptoms were due to the absorption of a strong poison secreted by the bacteria. After numerous experiments Koch succeeded in rendering guinea-pigs susceptible to the comma bacilli by neutralizing the gastric juice with alkalies and restricting the peristaltic action of the bowels with opiates. For the last link in the chain of evidence, the experiment on man, we are indebted to the carelessness of one of Koch's pupils, who, while working with cultures of the comma bacillus, contracted the disease. But even those who still doubt that Koch has found the actual cause of cholera, must admit that, since the discovery of the comma bacillus, the ravages of the dread scourge have been limited in Europe to Spain and Italy, while the more intelligent nations bordering right on these countries, and which before had always been involved in the epidemics, have escaped.

Among the bacteria to which we can ascribe pathogenetic properties with great probability are the spirochæta of recurrent fever, discovered by Obermaier; the gonococcus of Neiser, and Eberth's typhoid bacillus. All these fulfil Koch's first two conditions, but the first cannot be cultivated in our present media, the second only in human blood-serum, and the last, although easily cultivated, does not readily affect the lower animals. The diagnostic value of the gonococcus has often been proven, and the writer has been able by microscopic examination to demonstrate the gonor-

rhœal nature of a purulent ophthalmia, although the presence of urethritis had been denied.

The well-known preventive qualities of vaccinia, although based purely on empirical knowledge, soon gave birth to the hope that prophylactic inoculations might be practiced also for other infectious diseases than variola. Pasteur has succeeded in producing an attenuated virus of anthrax and of chicken cholera. He heats the pathogenic bacteria to a temperature just below that which would kill them, and subsequent generations of such debilitated microbes inherit the diminished virulence and protective properties of their ancestors. The practical value of this discovery has, unfortunately, been very much diminished by Koch's observation that the preventive inoculations of anthrax did not render the vaccinated animals refractory to infection from the alimentary canal, which is the gate at which the disease enters in the great majority of cases. Similar inoculations have also been practiced to a considerable extent on man against cholera by Ferran, and against yellow fever by Domingo Freire, but these experiments, although now looked upon with more favor by eminent bacteriologists than they were in the beginning, are not yet numerous enough to warrant definite conclusions. Some recent experiments would seem to indicate that the ptomaines secreted by the bacteria, or even the salts contained in the urine of animals suffering from certain infectious diseases, can be used successfully for protective inoculations.

I have now attempted to briefly outline the great progress made by this new science within the last six years. Over 200 varieties of bacteria, I believe, are now known. But very much still remains to be done. It is easily understood that the differences between these minute beings, situated at the very boundary lines of the still visible, must be very slight. Although Koch has demonstrated so well the features distinguishing the comma bacillus of Asiatic cholera from that of cholera nostras, that even the novice can recognize them, still other bacteria remain so similar to each other that the keenest expert cannot predict their opposite effects upon the animal economy. To mention but one example: Löffler has described, under the name diphtheria bacillus, a micro-organism causing in animals the most rapidly fatal septicæmia; but, with an impartiality worthy of respect, he does not claim it to be the real cause of the disease, because he also found apparently the identical bacillus, with the same virulent properties, in one out of twenty normal fauces. Another observer cultivated from the pharynx of various healthy persons, and from those affected with true diphtheria, with scarlatina and rubeolar angina, a microbe resembling very closely in every respect, not only morphologically but also in its colonies in different culture media, the true diphtheria bacillus, which, however, is perfectly harmless when inoculated into animals. And more than this, between these two extremes all gradations of toxicity are found, some producing but a slight local infiltration, others large abscesses, others again severe necrotic changes, others still killing only young animals and sparing adults. On the other hand, the same micro-organism, under varying conditions, may so change in size and shape as to successfully hide its identity.

Let us, then, hope that this new science, so auspiciously cradled by the French school in the 50's, so grandly nursed into vigorous youth by the Germans within the last six years, may continue to develop as rapidly in the future as it has done in the past.

LIGATION OF FEMORAL ARTERY AND VEIN FOR STAB WOUND.

BY HAL C. WYMAN, M.S., M.D.,
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Miles D., æt. 19 years, a clerk, in good general health, was stabbed in the middle of the thigh with a pocket knife. The knife blade was about three inches long and three-fourths inch wide. It penetrated its length and divided the left femoral artery and vein beneath the sartorius muscle. The hæmorrhage was sudden and appalling. The boy who struck the blow was spattered with blood, notwithstanding the wounded thigh was enveloped in pants and drawers. The wounded boy had knowledge and presence of mind sufficient to thrust his finger into the wound, and so restrain, in a measure, the hæmorrhage until a physician could be summoned and arrive.

Dr. F. W. Owen, of this city, responded to the call, and reached the patient within five minutes after the wound was received. He at once corded the thigh, compressing the femoral artery in Scarpa's triangle, summoned the Emergency Hospital ambulance, and had the patient taken to that institution, where I saw him a few moments later.

He was then deathly pale, too exhausted to tell me how the wound occurred, and fainted when his head was raised from the level of his body. His pulse was too rapid and weak to count, and so compressible that the most delicate touch was necessary to detect it at the wrist. The corded thigh gave him great pain. He was ordered water and beef-tea freely for an hour. When his pulse and strength were better, chloroform was given. The wound was traversed by an incision about three inches in length along the internal border of the sartorius muscle. The sheath of the femoral vessels was revealed by turning aside the sartorius muscle. The stab-wound was shown to

have transfixed the sheath, and to have divided the femoral artery, and to have very nearly divided the femoral vein. The ends of the artery had retracted, so that the cut surfaces were about one inch and a quarter apart. The wound in the vein was open like a wide V, three-fourths inch wide at its widest part. Ligatures of carbolized silk were applied to both distal and proximal ends of artery and vein. Then the muscle was turned back, a drainage-tube inserted, and the wound closed with interrupted sutures.

The pressure had been in the meantime removed from the arteries by taking off the cord which Dr. Owen had tied tightly around the thigh to stop the hæmorrhage, and the impulse of the beating artery against the ligature on the proximal end of the artery was plainly felt by my finger. All the ligatures (four in number) were applied about one-half inch from the cut surface of the vessels. The wound was dressed with antiseptic gauze cotton and bandages sterilized by corrosive sublimate and heat. The leg and thigh were enveloped in cotton, and laid on a pillow surrounded by hot bottles. The leg was elevated to favor return circulation.

The next day, December 11, 1888, the toes were warm and movable. The leg and thigh below the wound were swollen moderately. The pulse was 120 and weak, the temperature 102° F.

December 12 there was oozing of bloody serum from between the sutures. The leg, thigh and foot were warm, but more swollen. The spaces between the sutures gaped and oozed. Pulse 120, temperature 101°. The patient's bowels moved. His tongue was furred, his mind clear, and his disposition hopeful and kind. He told how the wound was received, and how quickly after all looked dark to him; how his head whirled.

Dec. 13 some of the sutures gave way with the swelling of the thigh and leg. The calf of leg was very hard. The wound produces pus along its edges. Care is taken that dressings are not applied so tight as to interfere with venous circulation. No swelling or tension of thigh above the point of ligature of artery and vein. Pulse continued weak and rapid, appetite good, kidneys acting normally. Temperature 101°, once 100°. The great toe is cold and looks pinched and shrunken. A pin thrust into it is not felt. It is white, like if frozen.

Dec. 14. General condition good. Patient says he has no pain, and a good appetite. Slept well. The temperature and pulse are 102° and 120. His tongue trembles but his voice is strong and a trifle shrill. The wound is suppurating moderately. The great toe is black on its inner border and continues cold and without sensation; the other toes are paler and without sensation.

Dec. 15. Bowels moved naturally. Has eaten well, but with less relish. Has mild delirium after sleep. Pulse 120, temperature 103°. Is restless. Great toe and two next toes quite black and cold. Instep and arch of foot warm and sensitive. Great toe has mortified look. No sign of demarkation. Swelling of leg and thigh less. Calf not so hard, tongue shaky, hands nervous.

Dec. 16. Temperature 101° in A.M., 105° in evening. Pulse remains in the same weak and rapid condition. Gangrene has extended to base of first metacarpal bone, and slopes down across the foot to little toe. Patient does not take food well. Is taking freely of iron and quinine.

Dec. 17. Gangrene has extended about half inch further up the toes and foot. Temperature 104°, pulse 120. Wound is granulating. Swelling less in leg and thigh; all feel warm except toes. No defined line between cold and warm, dead and living tissue. More delirium; tongue furred, appetite gone. Takes milk and gruel. Urine muddy.

Dec. 18. General condition unchanged. More of the foot dead. Cotton and artificial warmth still applied to leg, etc.

Dec. 19. Temperature reached 106°, pulse more rapid and feeble. General condition worse; foot and leg unchanged.

Dec. 20. Temperature 101°, pulse 120. Patient has taken freely of whisky, iron and quinine. Bowels moved. No appetite, but takes food. Condition otherwise unchanged.

Dec. 20. Gangrene has run up over instep to ankle. Does not feel my finger on the bottom of his foot, but is sensitive about the malleoli. Temperature 102°, pulse 130. Same treatment.

Dec. 21. Temperature 105°, pulse 130. Respiration hurried and short. Delirium at times, but is easily roused out of it. Bowels and kidneys acting well.

Dec. 22. Temperature 105°, pulse 130. Other symptoms same as yesterday. Is much weaker. Leg and foot unchanged. Wound discharges thin pus.

Dec. 23 and 24 patient continued to grow weak. Began to raise the larynx with each inspiration; and died on the evening of the 24th, fifteen days after the wound was received.

The toes and adjacent part of foot had blackened and mummified. There was no line of demarkation. There was no softening of the parts adjacent to the wound. The gangrene was limited to the parts below the ankle, with some discoloration of the anterior aspect of the lower third of the leg.

Death in this case was due, I think, to the hæmorrhage, and not to the changes which resulted from the ligation of the artery and vein.

2. The fever was due to the hæmorrhage—exhaustion fever—and not to sepsis from the wound or the dead toes or foot. There was fever before the toes were cold, or discolored, or dead.

3. No blood worth speaking of was lost while applying the ligatures to the artery and vein. At

no time after the patient reached the hospital was he sufficiently recovered from the shock and hæmorrhage as to make amputation of the thigh a safe procedure.

4. It would be interesting to know what peculiar ferment, bacterium, chemical, or fever factor is liberated or confined in the system after severe hæmorrhages. It certainly seems to be set in action by the hæmorrhage, and appears to be wholly independent of external influences.

A CASE OF HERNIA OF PARTURIENT UTERUS THROUGH THE LINEA ALBA.

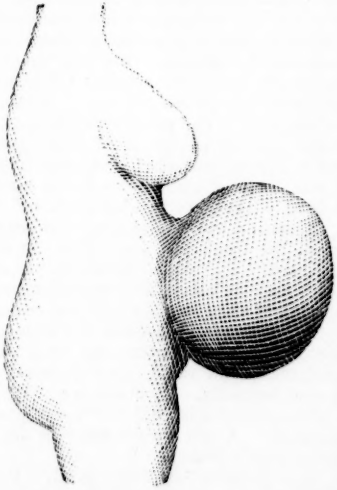
Read before the Medical Society of the District of Columbia, October 31, 1888.

BY CHARLES E. HAGNER, M.D.,
OF WASHINGTON, D. C.

In July, 1884, I delivered a primipara, Mrs. Blank, (after a prolonged labor) of a full term female child. Forceps were used, with slight laceration of the perineum, which was immediately stitched up and healed perfectly. She made a good recovery, and showed no signs of ventral hernia.

In March, 1886, Mrs. B. was delivered of a second full-term female infant without forceps, the perineum remaining intact, the labor being a short one (six hours), and perfectly normal. Within three months patient called my attention to a "lump" about the umbilicus. Upon examination I found an umbilical intestinal hernia, about the size of an egg, which was readily reduced, the opening being large enough to permit the introduction of the end of the finger. An abdominal truss was ordered which retained it perfectly. The patient wore this until she was taken in labor with her third child, in Feb., 1888.

On Feb. 8, 1888, at 10 A.M., I was called to see Mrs. B., and found her in the first stage of labor, os dilating and pains frequent. I remained an hour, when, everything progressing normally, I left her for an hour and a half. Upon my return found the bag of waters ruptured, patient in bed and in active labor; os fully dilated, head engaging L. O. A. The labor progressed normally and actively for about an hour and a half, examinations being made from time to time. Suddenly the patient after a very violent pain, called out and said: "Oh doctor, I am tired out, I can no longer bear down." It had been about ten minutes since my last examination. On approaching the bed, I observed that the abdominal tumor, heretofore perfectly normal, presented a peculiar appearance, being much more prominent, and seeming to project at right angles to the patient's body, she lying on her back. Upon lifting the sheet, I was startled to find that the uterus had left the abdominal cavity, and was covered only by the skin, which was very tightly stretched, and seemed as thin as tissue paper.



The uterine vessels were clearly seen, also the contractions, when a pain came on. The head at this time was in the vagina, and I immediately saw that the woman was correct in saying that she could make no expulsive effort. Notwithstanding the uterine contractions, which were regular, and strong and visible, the head making no advance, and the patient becoming exhausted, I immediately applied the forceps and delivered

the child. There was no difficulty in applying the forceps, as the head was well down, but the impossibility to restore the uterus to its normal position, and its tendency to fall to one side or the other, made it necessary to have the nurse support it in the median line until the child was extracted. It proved to be another fine healthy girl. The placenta was quickly extracted by the hand, as the patient seemed exhausted, and I was most anxious to terminate the labor.

As soon as the placenta was removed there was little trouble in replacing the uterus through the opening in the walls of the abdomen, it having thoroughly contracted and reached its proper size. A suitable bandage was applied, and the woman made a good recovery. It is surprising to find how small an opening there seems to be in the abdominal wall at present; the lady was in my office to-day; she is wearing the abdominal bandage she wore before her last pregnancy, and says she suffers no inconvenience. I had not seen her before for several months, and sent for her so that I could report her present condition.

1507 H. St., Washington, D. C.

MEDICAL PROGRESS.

EIGHTY CASES OF CHOREA.—At the meeting of the Royal Medical and Chirurgical Society on Jaunary 8, DR. W. P. HERRINGHAM read a paper on "Eighty Cases of Chorea: Antecedents, Family History, State of the Heart, and subsequent History," of which the following is a summary. Antecedents: Acute rheumatism preceded the attack in nineteen cases, immediately in four, at some interval in fifteen. It accompanied the chorea in two cases. Pains in the joints preceded the attack in fifteen cases, accompanied it in one case. The total number of cases in which rheumatism could be traced was thirty-seven. Injury, shock, or violent burst of emotion preceded the attack in six cases. The interval was never greater than two days. Hard mental work or worry was found in twenty cases. These influences were not mutually exclusive, since all those classed under injury, shock, or emotion could alone be considered as exciting, the others only predisposing causes. In twenty-five cases none of them could be traced, and of these fourteen were first attacks. Nearly all the patients were delicate; headaches and indigestion were the most common complaints. Family history (calculated from parents, brothers, and sisters only): Rheumatic fever had occurred in twenty-five out of seventy-five families, seventeen of which belonged to thirty-four patients of the rheumatic classes, and the remaining eight to forty-one in whom there was no history of rheumatism. Chorea had occurred in twelve families, nine of which were also rheumatic. State of the heart (throughout): Natural in ten, uncertain (that is, doubtful) endocarditis in twenty-five, certainly diseased in twenty. Signs of disease developed during observation in eleven cases, and signs which were at first present vanished during observation in four. Thirty-seven cases were seen again, usually at an interval of two years or over. For the most part they presented the same state as before. Of the twenty-five doubtful cases two had become healthy, seven appeared certainly diseased. Of the eleven cases which developed signs during the attack of chorea, five were re-examined, and of these two were natural, while three gave good evidence of disease. This last was important, as tending to show direct influence of chorea upon the heart. The following conclusions were drawn: 1, that a large number of choreic patients were liable to rheumatism; 2, that choreic patients were nearly always of a delicate constitution; 3, that chorea was sometimes directly caused by emotion; 4, that chorea might cause permanent heart disease; 5, that it also gave rise to signs of heart disease which were not permanent.

DR. A. E. GARROD, at the same meeting read a paper "On the Relation of Chorea to Rheumatism, with Observations of Eighty Cases of Chorea," sixty-one of the patients being females, and only nineteen males. Forty-nine were suffering from first attacks. The average age of the female patients was considerably higher than that of the males. There was a history of rheumatic fever in the near relations of twenty-six patients, of rheumatism with swollen joints in those of three, and of rheumatism in three more, making a total of thirty-two, or 40 per cent., with rheumatic family histories. It was pointed out that the tendency to chorea was far more marked in some rheumatic families than in others, and examples were quoted illustrating this point. The total number of cases in which there was a personal history of rheumatic manifestations other than endocarditis was thirty-six or 45 per cent. In fifteen of these there was a definite personal history of rheumatic fever, in nine of rheumatism with swollen joints, in one of joint pains, confining the patient to bed, and in nine of joint pains only. One patient had nodules but no arthritis, and one had acute pericarditis. It was shown that the same patient sometimes had an attack of chorea with joint pains only, and a later attack with well-marked rheumatic fever. Evidence was brought forward to show that some cases in which there was no family history of rheumatism, and no personal history of joint pains were nevertheless of rheumatic origin, cases being quoted of rheumatic patients who had previously suffered from chorea, of the development of erythema nodosum and arthritis in the course of apparently non-rheumatic chorea, of

chorea with endocarditis and nodules without joint pains, and of the association of acute pericarditis with chorea. In fifteen cases the onset was ascribed to fright, but in some instances inquiry showed that the fright followed the onset of the chorea. A definite murmur was heard in forty-five cases, or 56.25 per cent., and in six others the first sound was murmurish. The percentage of murmurs was naturally highest amongst those with personal histories of rheumatism, but was lowest amongst those with family history only. In some instances the murmurs developed under observation. The opinion was expressed that the endocarditis of chorea was probably always of rheumatic origin, but that we had no evidence to show that all chorea was of rheumatic origin, a considerable number of cases being probably due to emotional and other causes.

DR. CHEADLE said that there was no need for any apology for bringing up the subject again, as it was one which had not as yet been at all settled. It was leading to the conclusion that rheumatism was something much larger than arthritis. He thought Dr. Herringham had in some points based his inquiries on too narrow a definition of rheumatism, and also he was obliged to neglect those cases in which rheumatic arthritis followed chorea. Truly rheumatic symptoms in children were often very slight and transitory. He had a child admitted with chorea under his own care in St. Mary's Hospital, in whose history and symptoms careful examination had failed to detect any sign of rheumatism on admission, and yet in whom, after four or five days, slight rheumatic arthritis came on, and lasted only forty-eight hours, but yet was quite distinct under the circumstances it was then in, but it would have never been noticed in the homes of the poor. He was surprised that Dr. Herringham had found fright or emotion a cause in only six cases. He had himself noticed the case of a rheumatic child who had had chorea, and had recovered completely; it was taken to the pantomime, and next day it was in violent chorea again. A rheumatic boy at Charterhouse, after recovering from a first attack, got it back again from the violent emotions of a schoolboy's quarrel. Chorea went along with an unstable nervous system, and in a family it was very often noticed that the unstable one was the rheumatic. He should have expected to find some reference to the minor rheumatic symptoms in Dr. Herringham's paper—such as erythema and rheumatic nodules; both were common in rheumatic chorea. In placing headaches among the commonest of minor affections in chorea, he was glad to see Dr. Herringham agreed with the Collective Investigation Reports. As to the larger generalizations about the connections of chorea, he was himself inclined to think that much more chorea was rheumatic than was generally allowed; in a choreic case the absence of previous arthritis was not a proof against rheumatism, for it might have been overlooked, or it might come after the chorea.

DR. SANSOM wished to confine himself to one question: Was fright-chorea always rheumatic chorea? From his own experience he should certainly answer, No. Dr. Herringham seemed to him to favor the theory of the pan-rheumatic origin of chorea. He admitted, of course, that rheumatism was a cause in many cases, but he thought there was definite proof that there were also cases arising in non-rheumatic patients from fright only. He believed that in some figures brought forward by Dr. Stephen Mackenzie these amounted to as much as 15 per cent. As an example he cited the case of a child under his care in the London Hospital, who, up to the time of the onset of the chorea had had no disease at all. It had been in a burning house, and had suffered intense fright. The heart was put into a state of palpitation, after which chorea was developed. There was no connection with rheumatism. If an origin of chorea was sought for which was *a priori* probable, it was easy to see that fright would supply such a cause for the phenomena noticed in the heart. The first thing that followed on fright was pallor—an inhibition of the heart, with local contraction of the arterioles. After that there was a violent reaction and overaction of the heart, such as might be quite enough to cause injury to the valves. He wished to emphasize two different classes of change found in the choreic heart: first, those due to rheumatism; and, secondly, a smaller group, producing a quite different murmur, sometimes even an aortic diastolic murmur, which was transitory. As for any choreic action of the musculi papillares, he thought there was no need to dwell on its impossibilities, for it had been abandoned long ago. On the whole, however, he thought there was a very strong case for an endocarditis which was not rheumatic.

DR. STURGES was very sorry to see the pan-rheumatic theory of chorea gaining ground. It was unfortunately a point upon which physicians were apt to form themselves into parties as if they were parliamentary politicians. Dr. Cheadle had stated the view of the rheumatic party strongly, and he hoped he might be allowed to put forward some other considerations. Dr. Herringham, in his eighty cases, had only found the immediate connection of acute rheumatism in four cases; less even than in the cases attributed to shock or fright. Rheumatism as a cause was often too far to seek. Dr. Cheadle had mentioned cases in which rheumatism had followed chorea, but he had not himself found anybody attributing the causation of rheumatism to chorea. In the case of children, it was often very difficult to find out when they had had rheumatism, and

yet very easy to hear of their chorea, for many of the parents dreaded the disease unduly, and asked constantly if it was "going to the brain." The relationships of rheumatism and chorea were differently estimated in different countries. In Germany rheumatism was looked on as a trivial cause of chorea. In France chorea was one of the manifestations of rheumatism. In the United States, Dr. Osler in some very careful statistics had come to the conclusion that in only 15 per cent. of the cases of chorea was there any relation to rheumatism. It was a large and at present obscure question whether there was some deep connection between joint pains and nervous disease. Certainly in some cases of rheumatic arthritis the exciting cause was not external cold; and again there were a few other cases where nerve strokes produced joint pains first and chorea afterwards. In the case of a little child just under 3 years old under his care, the primary cause of disease had been the quarrelling and fighting of its father and mother, and this had produced first chorea and then rheumatism. In the first stage of this nervous chorea they had emotion, then motion followed. The important point was to stop it before it came to motion. It was often noticed by parents and schoolmasters how often a child was stupid or generally out of temper when it was going to have chorea; that was the important time to recognize, for then it might be arrested; after that they had failed to gain much control over it.

Dr. Barnes thought that in any general discussion on chorea its relations with pregnancy ought not to be neglected. When chorea had occurred in a girl it sometimes comes out again in pregnancy with great violence, and occasionally turned into insanity, or ended fatally. To grasp its nature completely, he thought that even a larger view of its pathology was wanted than what had been taken that evening. Fright, he admitted, was a serious condition and an absolute cause. Whether pregnancy was a cause of valvular disease he admitted that he was not pathologist sufficient to affirm or deny absolutely.

Dr. Stephen Mackenzie agreed with much that Dr. Cheadle had said, but thought that to convince other people than oneself that rheumatism was the cause of chorea in all cases needed more precise evidence than it was possible to obtain. From the survey of the facts in Germany, France and the United Sates, it was clear that rheumatism was only one factor in the causation of chorea. Chorea, however, was far more nearly connected with rheumatism than any other nervous disease. He must remind Dr. Sansom that it required a very special nervous disturbance to bring on chorea. Epilepsy did not bring it on, nor tetany. He was glad Dr. Barnes had brought to the front his point that chorea in a pregnant woman was a very serious malady. But many pregnancies in women who had had chorea in childhood might be passed through without recurrence of chorea; some special cause was needed to revive it.

Dr. Robert Lee had come to the conclusion that not much could be gained from the study of clinical tables. What was this chorea they were discussing? It was nothing more than a group of symptoms, not a disease. No group of symptoms could causes heart disease. We could find out very little about the origin of chorea until we could tell whether all choreas were the same. Emotional cause in the younger children could not be neglected; that was just the attraction in the study of the disease.

Dr. Herringham said he had been taken to task for using rheumatism in too narrow a sense as merely an arthritis, and neglecting such points as erythema, rheumatic nodules, and others; but he had deliberately abandoned any attempt to learn accurately of such things from the out-patient class from which he had drawn his statistics. Dr. Sansom had spoken of an effect on the heart as the first result of fright, but would he not on reconsideration have to go back to an effect on the nervous system influencing the heart as even prior to that? To Dr. Barnes he was much indebted, and wished there were many more of his colleagues in his branch of practice who took an equally broad view of pathology. It seemed almost necessary to remind Dr. Lee that all diseases were collections of symptoms. Chorea, he quite admitted was no exception to that rule; nor was rheumatism, and yet Dr. Lee spoke of rheumatism as a thing well known enough.

Dr. A. E. Garrod thought he should just guard himself by reminding one or two speakers that he had never said that all chorea was rheumatic. Dr. Sansom had spoken of fright as a direct cause af valvular disease of the heart. He should ask Dr. Sansom if that were so, where he would find a case of heart disease due to fright which was entirely separate from chorea. Such questions had been often asked, and were very seldom answered. He was himself quite inclined to take the view of rheumatism as a very general disease, of which arthritis was only one symptom.—*Brit. Med. Jour.*, Jan. 12, 1889.

The Diet in Convalescence from Typhoid Fever.—In the course of an instructive paper on the management of this stage of convalescence in typhoid fever, Dr. J. H. Hutchinson says (*The University Medical Magazine*) that his own experience has been in accord decidedly with those who have found a too early return to solid food prejudicial to the speedy recovery of the patient. He has long since come to agree with Sir Thomas Watson that the management of the convalescence of typhoid fever is scarcely of less importance than that of the fever itself. It is certainly

not less difficult. A part of this difficulty arises from the impossibility of convincing the patient's friends that his voracious appetite cannot be fully indulged without danger. Dr. Hutchinson's own custom has been to continue the administration of milk, which forms the almost exclusive diet of his patients in the febrile stage, in cases in which it is well borne—and there are few in which it is not—for three or four days after the occurrence of normal evening temperatures, with the addition of animal broths. At the end of this time he gives eggs (soft boiled), the juice of rare meat, milk toast and other farinaceous articles of food. At the end of a week the soft part of oysters and fish are added to this dietary, and at the end of ten days the light meat of broiled chicken, and at the end of two weeks, butchers' meat. All these articles of food are given in small quantities at a time, but may be repeated at first once or twice, the latter oftener during the day. If milk be given in sufficient quantity—say 6 ozs. every two hours—it will fully meet the wants of the system. The only objections that can be possibly urged against this plan of treatment are that the continued use of milk is tiresome to the patient, and that it produces constipation. The first objection is of little moment, if there are dangers attending the administration of other kinds of food; it may be obviated by giving, after the first few days, at the same time with the milk, some of the farinaceous articles of food which will make it more acceptable to the patient, and will at the same time prevent, to a certain extent, its tendency to produce constipation.—*The Dietetic Gazette*, January, 1889.

TREATMENT OF INTERNAL HÆMORRHOIDS BY INJECTION.—In the *Illustrated Med. News*, October, 1888, a leading article recommends the further trial of treating internal hæmorrhoids by injection. The best plan is to use strong carbolic acid, which is applied with an ordinary hypodermic syringe in the following manner: The bowels having been thoroughly cleared out by an enema, and the hæmorrhoids well protruded, the patient is placed on his hands and knees, or directed to bend over a chair. From two to five minims of the carbolic acid are then injected slowly into the centre of each pile. After the injection has been made the hæmorrhoids swell rapidly, and it is desirable to return them within the sphincter as soon as possible, and the patient should be told to push up any portion which may subsequently protrude. The bowels should be kept quiet for twenty-four hours, and for the next few days gentle aperients should be used. If the rectum be examined with the finger a week or so afterwards, it will be found that there are indurated swellings corresponding to the points of injection; these shortly subside. Some observers direct that only one hæmorrhoid be treated at each sitting, but others prefer to inject all at one sitting. Sometimes a second injection is necessary after a fortnight; but it is seldom necessary to make more than two injections to cure a pile for many years. It is also useful to give an astringent ointment to be applied before and after the daily motion, for a few days. This treatment requires no anæsthetic, and enables the patient to go about his usual work at once, and is rarely followed by any complications.

THE RAPID CURE OF ANAL FISTULA.—DR. LONGO concludes his thesis with the following statements (*Bull. Gén. de Thérap.*, November 15, 1888):

1. The method ordinarily employed in the cure of anal fistula, while not entirely exempt from risk, necessitates constant attention for at least thirty days, and predisposes to relapse. 2. From the employment of the antiseptic method, a method of cure is possible in which the result may be attained in a much shorter time. 3. These processes, already employed with considerable success, consists essentially in the entire excision of the fistulous structure and the reunion by the first intention of the outer surfaces. 4. Cure is ordinarily obtained within ten days. 5. The majority of fistulas are amenable to this treatment, which is exempt from danger, which is usually not followed by relapse, and whose employment is not accompanied by any insurmountable difficulties, with the single exception of the rigorous application of the antiseptic method. 6. When the fistulas are united, accompanied by extensive development of pathological tissue, or when their rectal orifice is situated very high up, or when the fistulas are accompanied by hæmorrhoids,—then only is this method not applicable.—*Therapeutic Gazette*, January 15, 1889.

TUBERCULOSIS FROM CONTAGION.—At the meeting of the Finnish Medical Society, at Helsingfors, Sept. 22, MR. RUNEBERG reported a case of tuberculosis undoubtedly caused by contagion. The patient was a peasant, 39 years of age, who had an untainted family history, and showed in his own constitution no tendency to phthisis. Two years ago he was in perfect health; but the symptoms appeared a little after the death of his wife from consumption. He had occupied the same bed and nursed her during an illness of several years.—*London Medical Recorder*, Jan. 21, 1889.

LACTIC ACID IN TUBERCULOUS DIARRHŒA.—SÉGARY and AUNE recommend lactic acid, 2, 6, or 8 grams in twenty-four hours, in the treatment of diarrhœa of phthisis. They report 9 successful cases.

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SATURDAY, MARCH 2, 1889.

MORBID ANATOMY AND PATHOLOGY OF CHRONIC ALCOHOLISM.

The discussions relating to these important topics by the members of the Pathological Society of London, commenced on December 4, 1888, have brought prominently before the profession many facts of very great importance. Dr. Joseph Frank Payne, Vice-President of the Society and Physician to St. Thomas' Hospital, opened the discussion, with Sir James Paget in the chair.[1] After a brief historical introduction he asks "in what sense is alcohol a poison?" Defining a poison to be "a substance capable of injuring the body, either by causing damage to the tissues or by causing functional disturbance," he arranges all poisons into two classes, namely: "tissue poisons and functional poisons." He shows that alcohol, taken internally, is carried by the blood to all parts of the body, and not only speedily produces derangement of nervous functions, but also acts directly on the tissue elements, "producing degeneration, or ultimately necrosis, of the mucous membrane of the stomach, liver-cells, nerve fibres, nerve cells and muscular fibres;" and when the action is persistent or chronic it results in hyperplasia of connective tissue, fibroid changes, fatty degeneration and fatty infiltration. He concludes by stating that "the action of alcohol on tissue or tissue elements is threefold: 1, as a functional poison; 2, as a tissue poison or destructive; 3, as a checker of oxidation."

Both Dr. Payne and Dr. Lionel Beale claimed that the structural changes found in the liver from chronic alcoholism involved not only hyperplasia of the connective tissue, but also essential atrophy of the liver cells, and presented microscopical sections apparently sustaining their view.

Dr. George Harley, who followed Dr. Payne in the discussion, said: "The visible lesions produced in the digestive, circulatory and urinary organs by an excessive use of alcohol had been long recognized and carefully studied. The thickening of the mucous coats of the stomach, the hypertrophies, the indurations, the fatty amyloid and cirrhotic degenerations of the hepatic tissues; the atheromatous changes in the blood-vessels, and consequent hæmorrhages and apoplexies; the hypertrophy of the heart's tissues, and the dilatations of the cavities: as well as the fatty and granular degenerations of the cortical substance of the kidneys, had long been recognized. These tissue-changes, however, formed but a small proportion of the morbid effects met with in practice, from the fact that for every drunkard there were fifty others who suffered from the effects of alcohol, in one form or other. Amongst them were persons who had never been intoxicated in their lives. Of this so-called class of moderate drinkers, neither our hospital statistics nor our national mortality tables took any account, and yet it was those very moderate drinkers who were in reality the most numerous class of alcoholic victims." He corroborated this statement by reference to the Registrar-General's tables of comparative mortality of those engaged in different industries, in which it was shown that the death-rate of men between the ages of 25 and 65, engaged as brewers, commercial travelers, innkeepers, publicans, wine, spirit and beer dealers, was six times greater from diseases of the liver, and nearly two times greater from diseases of the urinary organs and the circulatory system, than in farmers and graziers, drapers and warehousemen, gardeners and nurserymen. Another important item presented by Dr. Harley related to the effects of alcohol on the constituents of the blood. His experiments had shown that the addition of 10 per cent. of alcohol to fresh arterial blood changed its color, prevented its re-oxygenation and destroyed its power of producing hæmin crystals. The addition of only 5 per cent of alcohol, while making no visible change in the color, yet entirely destroyed the capacity of the corpuscles for further oxydization

[1] See British Medical Journal, December 8, 1888.

or purposes of nutrition; thus showing that alcohol in small quantities produces an asphyxiating effect on the blood itself. In other words, it lessens the processes of oxygenation and decarbonization of the blood that take place chiefly in the lungs.

The *Lancet*, January 26, 1889, in its leading editorial on the discussion in the Pathological Society, has the following significant statement: "What is eminently worthy of the attention of practitioners in this connection is the frequency of *tubercular* disease in cases of alcoholic paralysis. In fact, the association of chronic alcoholism in all forms and tuberculosis was brought out by almost every speaker, including Dr. Payne, who said truly that the *inaccurate* impression that habits of alcoholic excess were in any way antagonistic to tubercular disease must be regarded as swept away." In another paragraph it says, emphatically: "We have seen the demolition of the belief that alcohol is a preventive of tubercle." When, in 1860, we presented to the Medical Section of the American Medical Association, in session at New Haven, the results of six years' clinical study of all cases of tuberculosis coming under our observation in their relation to the use of alcoholic drinks, by which it was clearly proved that the use of such drinks not only exerted no prophylactic influence, but the reverse (see *Transactions of the Amer. Med. Association*, Vol xiii, p. 565, 1860), not a few of our contemporaries thought it sufficient to attribute our conclusions to "temperance fanaticism." Will they apply the same logic to the work of the London Pathological Society at the present time?

THE ILLINOIS REPORT ON MEDICAL EDUCATION.

The Secretary of the Illinois State Board of Health has just issued the "Report on Medical Education, Medical Colleges, and the Regulation of the Practice of Medicine in the United States and Canada: 1765–1889." It may be said that this is the most complete and the most encouraging report on medical education that has been issued in this country, and shows a marked and gratifying progress in the direction of a higher standard of instruction and of educational qualifications for the practice of medicine. There have been, and still are bars to the attainment of the desired end; some of the obstructions have been removed, and others show signs of yielding; so that the prospects for the future are encouraging.

This Report embraces 267 medical institutions of all kinds in the United States and Canada—as against 252 in the Report for 1886—251 being in the United States. The total number of medical colleges now in existence, in North America (exclusive of Mexico) is 131, 118 being in the United States. In 1886 the number was 129, 117 being in the United States at that time. The number of extinct medical institutions is now 130—showing that a medical college may be founded but not established.

There has been an increase in the number of colleges exacting educational requirements for matriculation. In 1880 the number was 45, 44, in 1886, and is now 117. In 1880 but 22 colleges required attendance on three or more courses of lectures; in 1886 the number was 41, and 47 at present. There has been an increase in the number of colleges that recommend and provide for, but do not exact attendance on three or more courses.—53 in 1880, 48 in 1886, and 60 at present. Hygiene and medical jurisprudence claim a larger place in the medical college curricula than ever before. In 1880, 42 colleges had chairs of hygiene, and 61 had chairs of medical jurisprudence; in 1886, there were 110 chairs of each; while at present hygiene is taught in 117 colleges, and forensic medicine in 112.

Since the Report of 1886 the average duration of lecture terms has been increased. The average for all the regular schools is now 25.3 weeks, This average, it may be said, is cut down by the 17 weeks' term of the Medical College of Georgia, and the 19 weeks' term of the Woman's Medical College of Cincinnati. One hundred and fifteen schools now have terms of five months and more, against 110 in 1886–87; 66 have terms of six months and more, against 63 in 1887–88, and 55 in 1886–87. A number of colleges have signified their intention of requiring four years' study and three years' lecture course in the near future, in accordance with the resolution adopted in July, 1887, by the Illinois State Board of Health, "that the phrase 'medical colleges in good standing' . . . is hereby defined to include only those colleges which shall, after the sessions of 1890–91, require four years of professional study,

including any time spent with a preceptor, and three regular courses of lectures, as conditions of graduation," etc.

The Report shows that there has been a gradual increase in the number of matriculates since 1884–85, both in the United States and in Canada, while in the United States the number of graduates has been about the same. The percentage of graduates to matriculates has therefore steadily diminished in the United States, from an aggregate average of 36.3 in 1881–82 to 30.3 per cent. in 1887–88 for all schools of medicine. The percentage of graduates to matriculates in the regular schools has decreased from 37.1 in 1881–82 to 29.6 in 1887–88. For the last calender year this percentage varied in the individual colleges in the United States from 6.6 to 52.1. The Report says: "The percentage of matriculates to graduates is kept at a high point largely by the colleges in Atlanta, Baltimore, Louisville, Nashville and St. Louis, and those in Indiana."

We may appropriately close this notice of the Report by quoting the following from the introduction. "The effects of some of the State laws regulating the practice of medicine, have now shown two things: 1. That there was and still is a necessity for such legislation. 2. That under this legislation the colleges that have failed to comply with the demand for better work, must improve their methods or shortly close their doors. A study of this report will show that while there is an increased number of medical institutions that have recognized their duties in this regard, there are still some which seem wedded to as low a standard as is at all compatible with even scant recognition by the medical profession. On the other hand, the improvements in the methods of instruction and in the practical facilities for study, not less than in the exaction of a preliminary test of fitness for the study of medicine—have been more marked during the period which has elapsed since the publication of the last report of the Board on this subject than during any similar period in the history of the country."

El Escolar Medico, the first number of which has been received, is a small monthly medical journal edited by a committee of the students in the school of medicine at Monterey.

CARBONIC ACID EXHALATION IN DIABETICS.

The quantitative modifications of the carbonic acid exhaled by diabetics under the influence of diet and medicines has been investigated by LIVIERATO, of Genoa, his results being published in *Archiv für experimentelle Pathologie*, Bd. xxv, S, 161. The experiments were made on three diabetic persons, one man and two women, one of whom was obese. All the patients had had diabetes for several years, and each excreted about 500 grams of sugar a day (twenty-four hours). The carbonic acid exhaled was measured by Pettenkofer's method; the patient respired in a cabinet. The amount of sugar was determined by Wild's polarimetre. Livierato's results may be summarized as follows:

In diabetics on ordinary diet the excretion of carbonic acid is diminished by more than one-half. On a mixed diet, but with starch excluded, consisting of meat, milk, cheese and vegetables, the weight of the two thin diabetics diminished, while that of the fat patient increased a little. In all three the excretion of sugar was markedly diminished, while the excretion of carbonic acid increased a little, though not to the normal amount. On an exclusive meat diet the obese diabetic gained weight, as did the less thin of the other two. In the two that weighed most the excretion of sugar was markedly decreased, and there was increased excretion of carbonic acid. In the thinner patient there was increased emaciation, diminution of sugar, and stationary excretion of carbonic acid. Under the same diet, and with the use of bicarbonate of soda there was increase of weight in all the patients, diminished excretion of sugar, and considerable increase of carbonic acid, which was above normal in one patient. The addition of milk to the preceding diet always increased the amount of sugar and diminished the amount of carbonic acid excreted.

Under mixed diet, with the addition of lactic acid, the weight decreased or remained stationary. In the two other patients the sugar and carbonic acid remained stationary or increased slightly. Under ordinary diet (meat, bread, wine, soup, etc.) and lactic acid, the obese patient lost weight, as did the thinner of the other patients. The third patient increased in weight. The amount of sugar remained stationary, or was increased, and the carbonic acid increased in one case and decreased in the others. Under ordinary diet,

with the addition of bicarbonate of soda, all the patients gained in weight. The amount of sugar excreted by the obese patient remained stationary, but was markedly increased in the other patients. The carbonic acid exhaled was decreased in the case of the thin patients, and increased to normal in the fat patient. Generally speaking, then, the excretion of carbonic acid is in inverse ratio to the amount of sugar excreted.

It appears, then, that while the exclusion of starchy food is useful (and in fact almost imperative) an exclusive meat diet causes loss of weight, at least in thin patients. In these, says Livierato, a mixed diet, with the addition of bircarbonate of soda, which favors the combustion of the sugar, is most suitable. Lactic acid causes increased exhalation of carbonic acid, but does not correspondingly diminish the excretion of sugar.

EDITORIAL NOTES.

A CYCLOPÆDIA OF THE DISEASES OF CHILDREN, by American, British, and Canadian authors, edited by Dr. John M. Keating, is to be issued in four volumes by the J. B. Lippincott Company, of Philadelphia.

THE *Westnik ssudebnoi mediciny i obschtschestwennoi gigieny*, hitherto published as a journal of forensic medicine and public hygiene, announces that it will hereafter be a journal of general medicine, and its title will be changed to *Westnik obschtschestwennoi gigieny, ssudebnoi i praktitscheskoi mediciny*.

THE FOURTH CONGRESS OF RUSSIAN PHYSICIANS will be held in Moscow in 1891. The number in attendance upon the last (third) Congress was 1,648, 120 of whom were women physicians.

DEATH FROM CHLOROFORM IN A DENTIST'S CHAIR.—According to press dispatches a young lady died in a dentist's chair in Norwalk, Ohio, on February 21, after having had chloroform administered for the extraction of a tooth. It is stated that she "partly recovered from the drug." when "she started to rise from the chair, but suddenly sank back and died." From the meagre information conveyed in the press dispatches one cannot know whether the chloroform was administered by the dentist himself, or whether the administrator was a physician, or a person sufficiently skilled to administer chloroform; but one can scarcely conceive of a skilful anæsthetizer giving chloroform to any one in a dentist's chair under any circumstances. A person that would give chloroform to a patient in a chair, would probably not take the other necessary precautions when about to give chloroform, such as removing all sources of constriction of the body.

Is it not time that dentists, and physicians also, learn that chloroform is a very dangerous drug when given improperly? With the other means of anæsthesia that we have, is the use of chloroform for tooth-extraction justifiable? The fact that teeth have been extracted under chloroform, and without injury to the patient, does not justify its use for this purpose. The surgeon that would seat a patient fully clothed in a chair, and give chloroform to amputate a finger, or open an abscess, would be guilty of negligence little, if any, short of criminality. We are too much inclined to excuse such blunders, hoping that the blunderers have been taught a salutary lesson, which, however, is of no benefit to the person that has come to an untimely death. There should be more care, in dealing with the ills to which the flesh is heir, that the patient survive the treatment.

THIOL is the name given by Dr. Emil Jacobsen to a synthetic product having the exact formula of ichthyol, and being otherwise identical with it. It is intended as a succedaneum for ichthyol, being less disagreeable than it. It has been given internally in doses of forty grains, without apparent effects on the organism.

THE INFECTIOUS NATURE OF FIBRINOUS PNEUMONIA has been investigated by J. LIPARI, his results being published in *Il Morgagni*, August, September, and October, 1888. He reproduced pneumonia in animals by intratracheal inoculation of pneumonic sputa or of cultures of a microbe having all the characteristics of Fränkel's pneumococcus. In all cases he found the same microbe in great abundance, in the hæmorrhagic and sero-fibrinous pleural exudations, and in the hepatized pulmonary parenchyma, less abundant in the blood and spleen, inconstant in the liver, kidneys, and pericardial and peritoneal fluids. In some cases of pericarditis, peritonitis, and abscess of the liver the pneumococci were very

abundant. Inoculations of sputa or of pure cultures in the veins, in the peritoneum, or under the skin, never caused pneumonia; pneumonia occurred only when the inoculations were made through the lungs. The disease was first local, and then became general.

The British Journal of Dermatology, the first three numbers of which have appeared, is edited by Mr. Malcolm Morris and Mr. H. G. Brooke. By an arrangement with Professor P. G. Unna, articles sent to his *Monatshefte für praktische Dermatologie* and to the *British Journal* of *Dermatology* may be translated and published in both journals.

MEDICAL STUDENTS IN GERMAN UNIVERSITIES.—Official data give the total number of students of medicine in the twenty German Universities, for the winter semester of 1888–89, as 4,976 native-born, and 3,659 foreign, making a total of 8,635. Berlin has 1,456, and Munich 1,188, 670 of the latter being foreigners, while Berlin has but 385 foreigners. Erlangen has 181 foreigners to 116 natives; Freiburg 222 to 87; Jena 148 to 65; Leipsig 424 to 416; Strassburg 205 to 101; and Würzburg 798 foreigners to 186 natives. The other universities have more native than foreign students.

A POLYCLINIC FOR NERVOUS DISEASES will be instituted at Breslau in the near future under the direction of Professor Wernicke.

MEDICAL PARIS OF TO-DAY is the subject of a series of very interesting letters, which MR. ERNEST HART has been writing to the *British Medical Journal* for several weeks past. Among the subjects written of are the Pasteur Institute, its structure and arrangement, facilities for study, and plans of the Institute; the growth of places of higher instruction in Paris; the laboratories of bacteriology; the facilities for study by foreign pratitioners and students, and the liberality to foreign students and practitioners; the cost of education; the official organization of teaching, and the training of teachers; hospital teaching; education and examination. Almost all of two long letters are devoted to M. Charcot, and La Salpêtrière and its 5,000 inmates. The first letter was devoted to a comparison of medical Paris of twenty-five years ago with that of to-day. It is to be hoped that Mr. Hart will publish the really valuable series in pamphlet or book form, since they are of great interest to medical men generally, and medical teachers, particularly, can learn from them much that will be of value to them in their college duties.

SOCIETY PROCEEDINGS.

Medical Society of the District of Columbia.

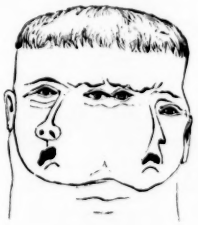
Stated Meeting, October 31, 1888.

SWAN M. BURNETT, M.D., IN THE CHAIR.

DR. A. F. A. KING presented:

1. DIPROSOPUS TRIOPHTHALMUS. 2. ANENCEPHALUS.

Dr. King stated that he was not prepared to give the history of either of the specimens. He thought, however, the specimen presented as Diprosopus Triophthalmus is Diprosopus Tetraopthalmus inasmuch, as there appear to be four eyes instead of three. In the drawing there are four eyes although the author gives it the name of "Diprosopus Triophthalmus."



DIPROSOPUS TRIOPHTHALMUS. (?)

DR. LAMB: The four eyes in the specimen presented are due to anterior duplicity. There was not cleavage of the head. There was fusion of the head only, which takes place later than complete cleavage. The acephalous specimen is of great interest. The head is between the shoulders. There is absence of the brain and cord with fissure of the skull and cervical vertebræ. By some such interruptions to development are considered to be the result of hydrocephalus. Another theory is that the head fold of the amnion and the head of the embryo have grown together and prevented development. Neither of the specimens would have had viability lasting more a few hours.

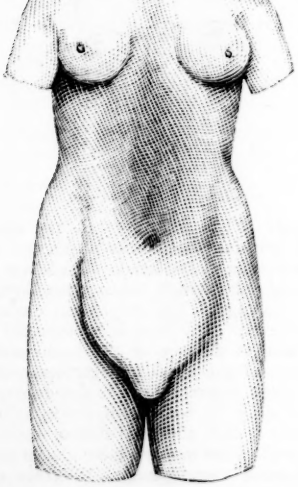
Dr. CHARLES E. HAGNER reported a case of

HERNIA OF THE PARTURIENT UTERUS THROUGH THE LINEA ALBA.

(See page 302.)

DR. C. E. HAGNER: There are several points of interest in the case reported. Could he have prevented the rupture? As he had delivered two other women with umbilical herniæ and as this one had been delivered twice before without any trouble from the hernia he did not anticipate such a severe complication. When he discovered the uterus extra-abdominally he was afraid to attempt replacement as it was apparently just beneath the surface of the integument. Should such herniæ be operated on in child-bearing women? Or should such operations be postponed until after menstrual life? He remembered having read that some surgeon had operated on just such cases but he could not recall the facts.

DR. FRY: The experience of Dr. Hagner was both interesting and rare. Herniæ of the pregnant uterus are serious complications, and may call for the Cæsarean operation. In this case the umbilical hernia started the rent. We should expect to find relaxed abdominal walls in multiparæ; but in this case it was only the third pregnancy. It was formally very rare, but it may become more frequent as laparotomy becomes more common as we have seen that it has a tendency to weaken the abdominal walls.



He had been called to see a multipara, in the sixth month of her fifth or sixth pregnancy, for a tumor in the abdominal wall. The tumor had existed in previous labors but she experienced no difficulty from it. Examining it, he found that the pregnant uterus protruded through an apparent separation of the linea alba. The diagnosis was not difficult. The tumor was pear-shaped, with its apex pointing downward. There was an œdematous swelling of the abdominal wall so that it hung down over the vulva like a bag. The drawing illustrates the appearance of the tumor. He did not think an operation would be justifiable unless there was suffering demanding it.

DR. KING: If a woman with an umbilical hernia should become pregnant he thought adhesive plaster would act better than a bandage, because it would slip as the abdomen enlarged. Hernia of the unimpregnated uterus was unusual, and of the impregnated is very rare. There are different varieties. Sometimes the uterus is outside of the abdomen before the impregnation and then it would remain outside. Two cases have gone to full term, the Cæsarean section has been performed and both women died.

DR. S. S. ADAMS had been able to find only one case reported similar to that of Dr. Hagner; but he had found a number of cases of hernia of the pregnant uterus a subject to which he had lately given considerable attention. He had found seven cases of inguinal, one of crural, five of umbilical and six of ventral hernia of the pregnant uterus. Cæsarean section was performed five times, Porro's operation induced labor once and natural labor once in inguinal hernia of the pregnant uterus. Four mothers were saved and four died and six children were saved and two were still-born. In the umbilical and ventral variety support was the principal treatment. Of the eleven cases the result in two is not stated. Nine mothers were saved and nine children; craniotomy was performed in one case, but this was offset by one twin pregnancy in which both children were saved.

Stated Meeting, November 21, 1888.

THE PRESIDENT, THOMAS C. SMITH, M.D., IN THE CHAIR.

DR. ERNEST F. KING presented a specimen and read the history of a case of

ULCER OF THE STOMACH.

J. L. M., white, native of Virginia. Visited in Virginia during past summer. Friends whom she visited report that she had good appetite and gained in weight, but complained of distress and at some times was in pain.

On Thursday, November 1, she went to spend the day and night with a friend. In the evening she walked one square to a church service, and during the service was seized with a deathly faintness and was with difficulty taken to the home of her friend and put to bed. On Friday she vomited blood, and again on Saturday. Her friends estimated the quantity as half a gallon. At mid-

night Saturday she vomited again profusely. I saw her first at 4 A.M. Sunday morning; blanched; suffering from nausea; pulse barely perceptible. Soon after my arrival she vomited some 4 ozs. of bloody mucus with some clots. I believed the hæmorrhage to have been checked. Gave enema of milk and whisky. Nausea seemed to be controlled by swallowing small pieces of ice. In the morning ordered tincture of chloride of iron, 10 drops in water every four hours, and if vomiting of blood recurred, a teaspoonful to be given immediately. There was apparent improvement during Sunday and Monday; no food being given by the mouth. Tuesday morning she seemed so much stronger I yielded to her entreaties and allowed her to have every hour a dessertspoonful of oyster broth which was nearly all milk. In addition ordered 2 drops of Fowler's solution every four hours. Tuesday evening more blood was vomited. She was given a teaspoonful of the tincture of iron, which seemed to increase nausea and was returned after a few minutes. She remarked that iron always did make her sick.

During Wednesday and Thursday she was fed entirely by the rectum, milk or milk and egg, with whisky and deodorized opium at times. Iron was continued in 10 drop doses. During Friday and Saturday she had beef essence in ice-water by the stomach. There was no further vomiting until about midnight Saturday. I saw her about 1 A.M. She vomited before and immediately after my arrival, nearly one-third filling the ordinary vessel. The teaspoonful of iron that was given her was almost immediately returned. Dr. Busey saw her with me on Sunday and Monday. Treatment was continued except that beef-tea was given by rectum, and teaspoonful of milk and lime-water half and half every half-hour by stomach. Monday evening she grew weaker, and when I saw her at 1 A.M. was evidently nearing her end. Her mind wandered at times, and at 5 A.M. she grew violently delirious, screaming out and taxing her father's strength to keep her in bed. This attack soon passed off and she sank back, rapidly growing weaker and dying from exhaustion at 10 A.M. Tuesday, November 13, twelve days after the first hæmorrhage and fifty-five hours after the last.

Dr. D. S. Lamb made the post-mortem examination in this case and reported: Surface everywhere blanched. Body generally bloodless. Right lung normal; some pleuritic adhesions of left. Heart normal. Liver pale. Spleen congested. Pancreas normal. Stomach coated with tenacious mucus; mucous membrane of the posterior wall, one-third the distance between the cardiac and pyloric orifices and within 1 inch of lesser curvature, showed two small ulcers, each less than ½ inch in diameter; one penetrates to muscular coat and is partly cicatrized; the other of less depth and entirely cicatrized. There was a small diverticulum of ileum. Remaining small and large intestine normal. Kidneys pale, bloodless. Bladder full of urine.

Dr. Busey said that this case was of peculiar interest to him for several reasons. The patient had been sick ten days before Dr. King asked him to see her, after she had had several copious hæmorrhages. She was well nourished, but pale and exsanguinated. There was no history of ill-health except slight discomfort after eating, nor of menstrual disturbance or neurotic condition. No hæmorrhage occurred after he saw her, and he was surprised on Tuesday, when he was asked to witness the autopsy. He had not supposed death would occur unless the hæmorrhage recurred. There was no question as to the diagnosis and treatment. The excessive irritability of the stomach was an unusual symptom in such cases. She could not retain anything except water. He was surprised that fatal hæmorrhage should have occurred from an ulcer not more than ¼ inch in diameter. Most ulcers are found on the posterior wall near the pyloric orifice; in this case it was nearer the cardiac opening. All ulcers do not bleed. It was the site and not the size of the ulcer which caused the fatal hæmorrhage in this case. The hæmorrhages were not more copious than frequently occurs, but were more frequent. As death occurred fifty-five hours after the last hæmorrhage, it must have been from exhaustion. She was nourished by the rectum. Death is due to either of the following conditions in their order of frequency: Perforation, hæmorrhage, exhaustion and complications. Ulcers do not usually occur in women as well nourished and as robust as this one seemed to be. Judging from the macroscopic appearances and the history the ulcers were of recent formation.

Dr. A. C. Adams: Was the ulcer near a large vessel? The arterial supply of the stomach is very extensive. He had had a case of hæmatemesis in which the patient vomited two ordinary cuspidors of blood, with only slight recurrences, and recovered—much to his surprise. In a case of typhoid fever in a woman the hæmorrhage lasted five days and the patient recovered. If the ulcer is away from a large vessel is it not very probable that the blood comes from some other part?

Dr. Edes: The case reported is very interesting. He had lost several cases of ulcer of the stomach, one of which resembled this. In one a man was taken with profuse hæmorrhage on the street and died in a day or two. At the autopsy it took some time to find the ulceration. It was found to have perforated a large vessel leading to it. In another case a woman had an enormous hæmorrhage and recovered. There are so few symptoms in such cases; they may have a history of gastric disturbances for a long time. Many get well without hæmorrhage, which, when it occurs, is accidental and caused by the ulcer cutting into the blood-vessel.

DR. W. W. JOHNSTON: Ulcer of the stomach is no doubt more common than we suppose. It is very probable that some cases which appear to be simple gastralgia are really gastric ulcers. The frequency of unrecognized gastric ulcers is proved by autopsies. A large number of healed gastric and intestinal ulcers were found at Prague without any recorded symptoms to account for their presence during life. Hæmorrhage is not a necessary symptom and occurs only in those cases where the wall of a blood-vessel is necrosed. As to the etiology, it has been shown by experiments upon animals that hot ingesta, and injuries from heavy weights and blows will produce ulcers of the stomach. From such causes hæmorrhage may take place into the submucous tissue with arterial thrombosis. If the thrombus occludes the nutritive vessel there will be ulceration. As to symptomatology, he had seen a number of cases of excessive hæmorrhage from the stomach without pain. Gastric ulcers can develop and heal without producing any characteristic symptoms, and autopsies show, and if we treated obstinate cases of gastralgia and cases of hæmatemsis on the theory that small gastric ulcers, such as are seen in this specimen, exist we might have much better results.

DR. LAMB: The stomach was thickly coated with a tenacious mucus. If the stomach were examined more carefully ulcers would be more frequently found. In cirrhosis of the liver fatal hæmatemesis frequently occurs without any disease of the stomach. In one case of fatal hæmatemesis he found a shallow ulcer near the œsophagus, which he might have lost sight of except for the great care in removing the tenacious mucus. He had no opinion to offer as to the cause of the ulcer in this case; it was situated near the gastric artery and probably one of its large branches ruptured.

DR. CALDWELL gave the history of a case. A girl, aged 16, had a number of serious hæmorrhages; on several occasions she vomited at least an ounce of blood; and once he saw two ounces. She had pain on swallowing, which she located near the stomach. Astringents and liquid diet were ordered. After this she frequently complained of food stopping at a sore spot and distressing her. Once at dinner, while masticating a piece of meat she laughed and the bolus was swallowed and lodged at this sore spot and gave her the most excruciating pain. He found her making efforts to vomit. He passed the œsophageal tube nearly to the cardiac end of the œsophagus where it met with a resistance; by firm pressure he succeeded in pushing the tube past the obstruction. There was a partial constriction which he relieved and she has not had any trouble since. This was probably a case of ulcer of the œsophagus.

DR. SELLHAUSEN asked Dr. King if his patient had had rheumatism. If so, vegetations might have formed on the valves, which subsequently were washed off, swept along in the blood current and form a thrombus in the nutritive artery of the stomach and thereby caused ulcer.

DR. KING had learned since the patient's death that some years ago she had had rheumatism.

DR. CHARLES E. HAGNER: It is very important in such cases to make a correct diagnosis. Excessive hæmorrhages frequently occur without ulceration of the stomach, as where men had been on prolonged debauches. He had seen cases of this character. One at Willard's Hotel vomited over a gallon and recovered; another died. In both there was cirrhosis of the liver. Excessive mucus may be produced by morphia. In a case he suspected ulcer and tried to diagnosticate it by the galvanic current, but failed. If the ulcer can be located by this method it is a nice way to diagnosticate it. He did not think a diagnosis could be made with certainty between ulcer and cancer of the stomach by the microscope. Sometime ago a microscopist diagnosticated cancer of the stomach, having found cancer cells in the vomited matter, but the woman got well and has gained in weight ever since and is now a robust woman. We should exercise the greatest care in giving opium to relieve the pain in cases of ulcer of the stomach lest we create the opium habit. After awhile these patients become so accustomed to taking morphia that they suffer for the want of it. These pains can usually be relieved by Parish's camphor mixture. The hypodermatic administration of morphia nearly always produces a pain in the pit of the stomach, like gastralgia.

DR. LAMB: The heart was normal and gave no evidence of rheumatic endocarditis.

DR. REYBURN: Such cases should be fed by the rectum for a long time, and it would be surprising how long life could be maintained by this method. He cautioned the members against administering morphia too freely and stated that the physician would soon become the slave of the morphia taker.

DR. HOEHLING had had some personal experience with hypodermatic injections of morphia and they always produced in him the pain referred to by Dr. Hagner.

DR. A. F. A. KING had never seen the patient before this illness, and knew little about her previous history. He has since learned from her family that she had last summer attacks of pain after eating. She complained of a slight pain in the right shoulder, which was relieved by paregoric and deodorized tincture of opium. The iron nauseated her very much. He was surprised at her strength; a few hours before death it took great force to keep her in the bed.

DR. CHARLES E. HAGNER presented the specimen and gave the history of a case of

CALCULUS SUBLINGUALIS.

A child, æt. 7, had a swelling about the size of a pigeon's egg beneath the lower jaw, which was very painful. Domestic remedies were tried and he was called in on account of fever. There was tenderness in the submaxillary region over the tumor. He gave an anodyne lotion and a febrile mixture. The child was not any better the next day, so he examined Wharton's duct and felt a hard substance. He removed two calculi, which were followed by a little pus. There was no further trouble. He reported this case because he thought it was unusual to find a calculus in such a young child in this location. About two years ago he had reported a case of a young lady who noticed a swelling under the ramus of the jaw every time she ate acids. He gave her vinegar and a painful swelling immediately appeared, which he attributed to congestion. Dr. Thompson saw this case with him. Dr. Hagner removed a large calculus from this patient.

Gynæcological Society of Chicago.

Regular Meeting, Friday, Dec. 21, 1888.

THE PRESIDENT, CHARLES T. PARKES, M.D., IN THE CHAIR.

DR. W. W. JAGGARD showed

THE UTERUS, ADNEXA, KIDNEYS AND URETERS

recently removed from the body of a IIpara that had died of eclampsia twelve hours after delivery. The specimens had been placed at his disposal through the courtesy of Dr. Fred. Jenner Hodges, of the resident staff of Cook County Hospital. The patient entered the hospital a few days before confinement; albuminuria was noted. The course of labor was normal; the first convulsion occurred after delivery.

Dr. Jaggard wished to direct the attention of the Fellows to the characters of the cervix uteri that he thought were in full harmony with the views of Bandl. He begged to make a complete report at the February meeting, when it was proposed to discuss the subject of puerperal eclampsia.

DR. HENRY T. BYFORD presented

A VAGINAL OVARIOTOMY TROCAR.

This instrument is designed to supply a want I have felt in the removal of ovarian cysts through the vagina. It is practically a curved canula with a little shield and stopper on the end which directs the fluid into a vessel. When the recto-uterine cul-de-sac of the peritoneum is opened the tumor is held by a hook while the slightly sharpened end is thrust into it. If the fluid be thick the stopper may be taken out.

CYSTO-FIBROMA OF THE OVARY.

The microscopic examination made by Dr. Frank Cary proves this to be a fibro-cystic tumor of the ovary. It was the size of an adult head, and very irregular in shape. The cysts, which made up about three-quarters of its volume, are clustered about an irregular white glistening fibrous mass at the pedicle. The cyst walls are thick and fibrous near the center, but become membranous at the circumference. That the pedicle became twisted some months before the operation seemed probable from the symptoms, and is testified to by this large blood-clot in the largest cyst, by the dark color of the cystic wall and coagulated fluid, and by the extensive inflammatory adhesion or fusion of the omentum with this portion of the tumor. The uterus has also undergone fibroid degeneration, and is the size and shape of a pine-apple. I left the uterus and removed the other ovary, which was somewhat large and vascular. I operated October 22d, at the Woman's Hospital, and discharged the patient apparently strong and well four weeks later. She was 40 years old, unmarried, had had symptoms of the tumor for fifteen years, such as incessant backache and pain in the abdomen. The menstruation was regular, and, contrary to what might have been expected, the flow was scanty.

OVARIAN PREGNANCY.

I have also brought some specimens from the practice of Dr. William H. Byford. It appears to be a case of ovarian pregnancy in which the sac was intact and developed down between the layers of the broad ligament. The tube was entirely separate from the sac, and on the opposite side of the ovary. The fœtus was macerated, and, although it formed a beautiful specimen at the time, has partly fallen to pieces. There was a small cyst in the other ovary, which you will find on the same platter.

History: Mrs. B., American, æt. 34, wife, married sixteen years. One miscarriage fifteen years ago. One child 14. Entered hospital May 19, 1888. Seven years ago, after an illness of several weeks, during which time she was confined in bed, and suffered much pain, she passed a fleshy substance, pronounced by attending physicians to be a false conception. Since that time, about every two years she has had periods of flowing for days or weeks at a time. Health between these periods as good as usual. About one year ago she missed two menstrual periods; was then taken sick, had severe hæmorrhage from uterus, and was confined to bed for two or three weeks. Since then until she entered hospital, has menstruated every two or three weeks, and flowed profusely at such periods. Diagnosis, granular endometritis, lacerated cervix, small fibroid tumor in posterior wall of uterus, enlarged ovaries. Was curetted a few days after entering

hospital. Trachelorrhaphy was performed about four weeks later. Operation a success. Seeming much improved, in July she was discharged. At St. Paul, on her way home, began to flow again, and returned to hospital. Fld. ext. ergot was given in twenty-drop doses four times daily. August 1, she was again curetted, but did not receive much benefit from this operation. The ovaries were removed November 12. Smooth recovery.

FATTY TUMOR OF THE SUPRARENAL CAPSULE.

The specimen I now wish to describe is a supposed fatty tumor of the supra-renal capsule, but it was unfortunately allowed to spoil and cannot be exhibited. Mrs. Silva Walker, Pataha, W. T.; æt. 38; American. Married twenty years; has had five children, eldest 19, youngest 10. No miscarriages. One year and a half ago first noticed increase in size of abdomen in right side and through pelvis. Slight backache. Size increased very rapidly the last six months. Menstruation regular and normal. She was operated on November 25, 1888, and is getting well. This, I believe, is the only fatty tumor of the suprarenal capsule which I can find on record that has been removed before death. A few have been discovered at autopsies. It weighed twenty pounds. As it filled the abdomen so completely, even pressing down the uterus, its place of origin was not determined before the operation. A feature of importance in the case was the manner in which the growth was removed. It was enucleated from the capsule, and the capsule sewed with catgut and trimmed so as to make a canal from the bed of the tumor up to the external abdominal walls. The edges of this canal or sac were sewed into the abdominal wound so as to shut off the abdominal cavity; the bed of the tumor was thus treated extra-peritoneally. The kidney was removed. Whether it might have been safely left or not is a debatable question; the chances were it would have undergone inflammatory changes. Its vessels were ligatured, and the ligatures left in the capsule. A large exposed vein, at the bottom of the cavity, was clamped with hæmostatic forceps, and a large bleeding surface, on the under aspect of the diaphragm about the normal attachment of the supra-renal capsule, was gathered together in the blades of two long hæmostatic forceps. The forceps were taken off at the end of thirty hours. The patient has done very well since. The tissues, which were caught in the bite of the forceps, have sloughed out, and the cavity is healing. The other kidney secretes twenty to forty ounces of normal urine a day.

DR. PARKES: How did you come to settle definitely that this tumor grew from the suprarenal capsule—why not from the post-peritoneal fat for a basis?

DR. BYFORD: The supra-renal capsule was not found, but this tumor was attached to the under surface of the diaphragm where the supra-renal usually is. The tumor now developed above and over the anterior surface of the kidney, and did not lift the kidney forward, but rather held it back in place. There was no indication of unusual fatty development in any of the tissues about. The firmness of the capsule and its relations after enucleation favored my view. A post-peritoneal fatty tumor about the kidney would have more lateral attachment, and, I think, develop more down the side into the iliac fossa; whereas this one, which was freely movable, pressed down in the centre of the pelvis so as to give the impression at first that it was attached to the uterus. All these facts have led me to consider the supra-renal capsule as the starting point.

CYSTO-FIBROMYOMA OF THE UTERUS.

The last specimen I have to show is a fibro-cystic tumor of the uterus weighing 30 lbs. It was surrounded by 45 pints of ascitic fluid, so that the patient was relieved of 75 lbs. of weight by the operation. What was left of her weighed about 90 lbs. On the right side is a plain fibroid growth; on the left side it has undergone myxomatous degeneration. A peculiarity is that the uterine cavity is completely obliterated ½ inch below the normal-sized fundus by the tumor, and begins again lower down. The patient was about 44 years of age and menstruated scantily. The tumor, which is known to have been growing over fifteen years, started below the fundus in the posterior uterine wall. The broad ligaments were ligated separately, and the uterine stump treated extraperitoneally. This is the sixth day since the operation. There has been but little reaction, the drainage tube is about dry, the patient is hungry, and has commenced to direct the household affairs. Flatus passed freely from the beginning. Formerly, when I was an adherent of the intraperitoneal method of treating the stump, I stood in great awe of abdominal hysterectomy for fibroids, but since adopting the extraperitoneal method I find that the mortality is but little greater than after ovariotomy.

I would like to say that I have been found fault with for failing to bring microscopic slides of my specimens, or reports of pathologists upon three cases of alveolar sarcoma of the uterus, reported at the September meeting of this Society, and that my diagnosis was called in question. In my anxiety to take up as little of your valuable time as possible, I suppose that I must have omitted to state that, in the two cases shown, specimens were obtained by curettement a week before I removed the uteri, and were examined by pathologists—that from Mrs. M. by Dr. L. L. McArthur, that from Mrs. Sh. by Dr. M. J. Mergler. In the case referred to, in which the uterus went to

pieces during removal, Dr. Doering, who was the family physician, had the specimen examined by a pathologist. The fourth case I casually mentioned was diagnosed by Dr. McArthur from specimens I obtained by curettement. In the case of sarcoma of the ovary, Dr. Bayard Holmes was my authority.

THE PRESIDENT: I have had under my control lately a large tumor of the abdomen. I decided that it was behind the intestine, because there was one channel passing over the surface of the tumor, in which one could get a gurgling sound and something that resembled the displacement of gas. That indicated that the intestine was in front, and so it proved. It was a pancreatic cyst.

DR. W. W. JAGGARD: The Society is to be congratulated upon the presentation of so much valuable pathological material at this particular meeting. I have been specially interested in the case of alleged ovarian pregnancy. Without for one moment questioning the accuracy of Dr. William H. Byford's diagnosis, I beg to remind the Fellows that cases of ovarian pregnancy are very rare. Werth has demonstrated the tubal origin of many of the cases recorded as ovarian. As an essential criterion of ovarian pregnancy, the possibility of the participation of the corresponding tube in the sac must be excluded. In the specimen, as it has been presented to-night, it is impossible to exclude the participation of the tube in the sac.

THE PRESIDENT: I remember seeing a few years ago, in the office of Dr. Murphy, of St. Paul, a specimen of a uterus and both ovaries removed after death. In one ovary there was a fœtus. The Fallopian tube and all were present.

DR. W. W. JAGGARD read a note on

TWO OBSERVATIONS OF TYPHOID FEVER DURING PREGNANCY.

I report the two following examples of typhoid fever during pregnancy, both on account of the intrinsic interest of the case, as well as to bring out the experience of others with this complication. Typhoid fever is of very frequent occurrence in Chicago, and the Fellows that have resided in the city for a considerable period, can doubtless supply important facts that bear upon the reciprocal relations of this disease and pregnancy.

Observation No. 1.—This case was observed and described by my friend, Dr. William M. Findley, of Altoona, Pa. Mrs. M. H. Y., æt. 24 years, of Irish extraction, whose husband had been ill some six weeks with typhoid fever, was, after the initial prodromata, taken down with well-marked typhoid fever, May 7, 1873. Temperature and pulse ranging high in evening, with epistaxis, and diarrhœa early. The case would not have attracted unusual attention except for the fact that she was pregnant, and her labor was anticipated on May 10, 1873. She, however, was not taken in labor until May 15. On the evening of May 14, I was called about 9 P.M., after my regular visits for the day, and found her condition as follows: Temperature 103°, pulse 140, respirations 36, with marked bronchial irritation and secretion—having had six characteristic stools during the day in spite of remedies—and the contractions of the uterus quite strong and regular, os dilated to a half-dollar piece size and dilating. The heart being very feeble, and jactitation marked, with exhaustion coming on rapidly, I gave her, *ad libitum*, best port wine and brandy, so that in the four or five hours of labor she took a quart of brandy, and about as much more port wine, with no other effect than to keep her in the same condition as I had left her before labor came on. In due time the labor was terminated, contraction was perfect once the product of conception was expelled completely, and no untoward results followed. Although during the labor her bowels were moved copiously some six or eight times, after labor the bowel trouble seemed to subside, and she passed on to convalescence in some three week without marked irregularities, as in an ordinary case of uncomplicated typhoid fever. The secretion of milk was entirely suppressed, the mammary glands never showing any signs of activity during her illness.

The condition of the child, however, was remarkable. The entire cuticle or epidermis was shrivelled and creased as though it had been macerated in hot water, and in a day or two it was covered with bullous spots from head to foot, vesicular first, then pustular. As the boy was healthy in other respects, in the course of a week or ten days the eruption under emollients was well, and the cuticle becoming detached, was replaced by a healthy skin tissue and the baby was well, except that as a young man he carries the cicatrices of some of the bullæ.

Observation No. 2.—This case came under my own observation. From the history of the case, written by Dr. B. L. Riese, I make the following extracts:

Mrs. A. McG., 23 years old, married June 17, 1888. Last menstruation June 10, 1888. Morning sickness six weeks after marriage. Husband and wife taken sick with typhoid fever about the 28th of August; both admitted to Mercy Hospital, September 4th. Husband died a few days later of a malignant type of the disease. In the case of the wife, the disease pursued a typical course, lasting about three weeks; maximum temperature, 103.4° F.; maximum pulse 130. October 1st, several days after the subsidence of the fever, severe pains referred to the hypogastric region, hæmorrhage from the vagina. After irrigation of the vagina, examination revealed the vaginal portion softened and the ovum presenting

through the cervical canal. Plan of treatment, expectant, in the absence of serious hæmorrhage or symptoms of sepsis. October 3d, escape of liquor amnii; on examination, fœtus protruding through the os externum; removal of the fœtus, placenta, and membranes by bimanual manipulations under aseptic conditions.

The patient made an uninterrupted recovery. The ovum corresponded to the fourteenth week. (Presented for inspection.) The apparent cause of abortion in this case was hæmorrhage into the decidua serotina and placenta fœtalis. The extravasation occurred before the removal of the product of conception. This fact is evident from the character of the clot, as large as an English walnut, and firmly imbedded within the placenta tissue. The presence of hæmorrhagic endometritis may be inferred from the character of the decidua vera and chorion læve.

With reference to the mutually unfavorable relations of typhoid fever and pregnancy, experience teaches that pregnancy confers upon the individual no immunity from typhoid fever. Upon the other hand, the course of this disease is commonly modified unfavorably, and, the fever in turn exercises a distinctly prejudical influence upon the course of gestation. The tendency to the interruption of pregnancy is more marked than in any of the acute infectious diseases, with the possible exceptions of small-pox and cholera. In about two-thirds of the cases collected by Kaminski, Zülzer, Scanzoni, and others, pregnancy was prematurely interrupted.

The chief causes of abortion or premature labor are to be found:

1. In the elevation of maternal temperature causing death of the fœtus by insolation, or its premature expulsion by thermic irritation of the uterine musculature.

2. In the almost constant hæmorrhagic endometritis, illustrated in the specimen presented.

3. In the depression of the maternal blood-pressure with asphyxiation of the child.

4. Until within a recent period the transmission of the infection through the placenta from the mother to the child has been regarded as possible, but not demonstrable. Lately, however, Widal and Chautemesse have detected the bacillus, alleged to be characteristic of typhoid fever in the blood of a fœtus, corresponding to the fourth month.

The unfavorable influence of pregnancy upon typhoid fever lies specially in the tendency to abortion or premature labor at a time when the loss of blood and the muscular exertion necessary to effect the expulsion of the product of conception may precipitate death from exhaustion. There is also increased risk of perforation.

DR. E. J. DOERING: I would like to have Dr. Jaggard tell us whether there are any statistics by American authors. I have had two cases, one last September, in which the fever lasted from three to four weeks, and in both of which pregnancy was not interrupted. One lady was in the sixth month of pregnancy, the other in the seventh month. The temperature in either did not exceed 104½° F. It is my experience that these cases are liable to go through without interruption. Before the discussion is closed, it seems to me it would be well to have the experience of members present. They must have seen such cases, and I do not think we should let the subject go by without all the members stating their experience. In my last case I expected daily that the patient would miscarry, but to my surprise she went right along. That was quite a severe case. In the other case the fever did not go quite so high, but the last case was typical, and lasted fully four weeks. I not only thought she would miscarry, but had grave doubts as to her recovery. But to my surprise and pleasure she passed through safely, and returned to her home in Mobile some months later.

THE PRESIDENT: If my recollection serves me, I am satisfied I have seen several cases of pregnancy complicated with typhoid fever, and I am quite sure that every one of them miscarried where the pregnancy was early; those in which the typhoid fever came on toward the later stages of pregnancy, the patient not only miscarried, but lost her life as well. Of course I cannot now recall the exact number, nor the cases, but that is the recollection I have. It seems to me I have often heard doctors say that it is rather an impression among medical men that if they have a case of typhoid fever in pregnancy it is likely to be followed by a miscarriage.

DR. JOHN BARTLETT: I recollect but one case. That was many years ago, in which a woman pregnant about four months, and in the third week of typhoid fever, doing quite well, was taken in abortion. She went through the process of labor satisfactorily, but died next day.

DR. BAYARD HOLMES: The transmission of the bacillus of typhoid fever through the placenta is a matter worthy of consideration. We know that in certain cases of anthrax the fœtus is not infected, although the mother's blood is full of the bacilli. After the birth of the living, healthy fœtus at term, a sufficient period follows for the incubation of the disease, and then appears anthrax; first in the umbilicus, then general symptoms of anthrax septicæmia. In other cases, however, the fœtus is infected with the anthrax in utero. In a paper that I presented to this Society some months ago, I held that the pyogenic infection of the fœtus through the placenta was a comparatively rare occurrence. Since that time I have paid considerable attention to that subject, and I conclude that my statement should be limited. All cases in which infection of the fœtus in utero has or has not taken place can be recon-

ciled. In cases of sapremia with the presence of multiple known bacteria in the blood of the mother, those bacteria are all included in phagocytes. These phagocytes are sufficiently powerful to prevent the multiplication of the microbes, although they are not able to destroy them. This accounts for those typical cases of Bollinger, in which the fœtus was not infected, although the blood in different parts of the body of the mother sheep contained the anthrax bacillus. Whenever, on the other hand, the sapremia has advanced to the condition of septicæmia, and the phagocytes have been overcome, and multiplication of the bacteria takes place at their expense, then embolism occurs in the peripheral arteries, that is to say, in the uterine wall, and the multiplication of the microbe follows at that point in close proximity to the fœtal circulation. In this way they force themselves onward into the capillaries of the placenta, and the fœtus is infected. In relapsing fever, and all cases of septicæma, the infection of the fœtus is the rule. Typhoid is a form of septicæmia, at least in the latter part of the first week. The symptoms of septicæmia are then present, viz., capillary embolism in the skin forming hæmorrhagic spots, the characteristic rose spots of typhoid; ptomaine poisoning, which either raises or lowers the temperature; internal capillary embolism resulting in splenitis, pneumonitis, hepatitis, nephritis, and in cases of a pregnant patient, hæmorrhage in the distended capillaries of the decidua in close proximity to the placenta. At first it is simply a miliary hæmorrhage, but as the destruction of the capillary wall increases by coagulation necrosis, a considerable quantity of blood escapes between the placenta and the uterine wall, and contractions of the uterus are initiated which ultimately expel the contents of the womb. The case which Dr. Jaggard reports from Pennsylvania seems to me to be one of acute pemphigus (Demme), and due to a secondary mixed infection of the mother, and not directly to the typhoid disease. Pemphigus is a relatively frequent form of secondary infection in children, but in the adult its manifestations are so trivial that a diagnosis is difficult. On this account the mother who was primarily infected seemed to escape, while the non-resisting child suffered the terrible disfigurement of the disease.

Dr. Jaggard, in closing the discussion, said he was unable to find in the literature of the subject any statistics from American sources that related to the items touched on in his communication. The role that maternal temperature plays in the causation of death of the fœtus depends chiefly upon the rapidity with which the rise occurs, and the duration of the pyrexia. As pointed out by Doléris, Doré, Max Runge, and others, if the elevation of maternal temperature occurs slowly, and if it be of brief duration, the fœtus commonly escapes injury.

Philadelphia County Medical Society.

Stated Meeting, January 23, 1889.

The President, W. W. Keen, M.D., in the Chair.

Dr. Mordecai Price read a paper on

AMPUTATIONS OF THIGH AND LEG.

The subject I wish to bring before the Society to-night is one of deep interest—to me at least, and to all others who are alike unfortunate in having lost a limb. In performing amputation on the leg, the chief object of the surgeon of the day seems to be to remove the limb and save life the future comfort and usefulness of the patient being minor considerations. The comfort and usefulness of patients who are subjected to amputation of the leg have received my personal attention through the entire period of my professional life. This has been my latest thought at night; my first consideration in the morning; and I have been painfully reminded many times during the day of the importance of changes in the present surgical practice. I see no reason why in this department we should narrow our surgery to a strict following of the *dictum* of a school of surgeons a century old; why we should not, in step with other departments of surgery and medicine, adopt those new truths which our advanced art and science and wider experience approve.

I ask your critical consideration of the few changes I propose to suggest. As a student I often marvelled at the numerous amputations done near the ankle and through the knee, for the reason then given, to save all the limb possible, apparently without due consideration of the discomfort and suffering to follow and the usefulness of the limb. I have waited for years hoping that some of our eminent surgeons, members of this Society, would bring the subject before us, when I expected to be able to say something upon the subject, Like many other departments of medicine and surgery, however, this seems to have been looked upon as one of the subjects forever settled. For as far back as the works of surgery of the eighteenth century I find the same old plates, the same old positions for removal of the limb—where it is a matter of selection with the surgeon—as I find in use to-day. Sometimes the accident comes to the patient's rescue and removes sufficient of the limb to compel the surgeon to give the patient a good stump. In an amputation to-day in the foremost hospital of the world —the Pennsylvania—if the location of the injury left a choice as to where the limb should be removed, it would be done through the ankle or at the lower third of the leg. I suppose you ask, "Why not?" I would answer that question by asking the question, Why do we amputate at all?

The answer would be, First, to save life; and second, to make a useful limb. Now, we can save life as easily by one method as by the other. Why not then operate solely for the best interests of the patient? In an amputation of the leg all that is left below the middle of the middle third of the leg is useless and in the way, and gives that much more room for ulceration and friction sores. Let me tell you, gentlemen, these are weighty considerations in an amputation, for they compel the wearer of an artificial limb either to endure great suffering or to leave the artificial limb off, as I can abundantly testify from personal experience. Nearly three-quarters of a century ago, Gibson used the following language: "As much as possible of the thigh should in all cases be saved. But the rule does not always hold good in amputations of the leg. If, for example, the leg be amputated just above the ankle, the bone, from the deficiency of surrounding muscle, cannot be well covered, and is therefore not calculated to bear the pressure of an artificial leg. On this account the patient is obliged to have an instrument of the kind adapted to the knee, and the leg, therefore, is carried out behind at right angles with the thigh and by its weight greatly incommodes the patient, so much so, indeed, that I have known two or three to submit to a second operation, for no other reason than to get rid of the incumbrance." This Dr. Gibson gives as his professional experience. I personally know of a number of re-amputations for no other reason than the suffering, discomfort, or absolute impossibility of wearing an artificial limb upon a long stump. After the application of an artificial limb there is a constant diminution in the size of the stump. Its nutrition being continually interfered with, and the parts being of low vitality, consequently, when we have ulceration or friction sores or injuries of any kind, it is with great difficulty that they are induced to heal.

There is another element to be taken into consideration. As soon as the artificial limb is left off, and the patient assumes an upright position, the limb is greatly enlarged by a species of œdema which takes place immediately, leaving the parts in no condition to heal. The limb has the feeling of being cold and almost lifeless, and if exposed to cold it would be the first to freeze. It is almost impossible to keep the amputated limb warm.

When the artificial one is left off, amputations through the knee-joint give in many cases a very bad surface to bear the weight of the body, and a leg is rarely worn with comfort. Such an amputation absolutely prevents the application of a full-lengthed limb, as the knee-joint would have to be lowered some three inches for want of room, making at best a useless appliance. Amputate therefore—if it is a matter of selection—through the lower third of the thigh. An amputation below the middle of the leg is objectionable on account of the length of the stump, which presents occasion for ulceration and is difficult to dress properly so that the limb may be worn with comfort. Every inch of stump over five or six inches below the knee involves that many hundreds of hours of suffering and distress to the patient. The additional chance of life does not add one feather's weight in favor of the long amputation. Amputation at the lower third does not give sufficient room for a strong ankle-joint, and, therefore, adds greatly to the wear and tear of the limb, thus adding largely to the expense. Amputations through the ankle may give the patient something to walk on, but this is oftentimes accompanied with great pain. It often gives him a poor excuse for a limb, and completely prevents any mechanical appliance from aiding him in the least, and forever prevents him from hiding his terrible deformity. If ever there was an appliance to which the term "slip-shod" could be appropriately applied, it is to those intended to imitate nature in these cases. The usefulness of an artificial limb is in proportion to the simplicity and completeness of its mechanical construction. The nearer it resembles the human limb in all its parts, the more perfectly it fills its office. There is one fact associated with these cases to which but few of you, perhaps, have given a thought: that is the ever present and painful consciousness of physical deformity which the patient has, and the fact that his maimed condition closes to him many avenues of honorable, useful, and lucrative employment. This applies especially to the case of civilians; to the soldier it is different; to him the loss of part of a limb is unchallenged testimony of gallant and heroic sacrifice.

DR. L. K. BALDWIN: I have been much interested in the remarks of Dr. Price, partly because a gentlemen called at my office this afternoon and asked me to look at an abrasion on the stump of amputated limb. The amputation had been performed at the junction of the middle and lower third. It was just such a stump as I thought that he ought not to have had. The operation was performed ten or twelve years ago, and although he has worn a number of legs, the stump is always getting rubbed. The remarks of Dr. Price in regard to amputations near the joint are very good. There is no one more capable of speaking upon this subject than Dr. Price himself, for there is nothing like practical experience. His remarks are worthy of all consideration, and it would be well if they were followed out.

DR. JAMES COLLINS: I have listened with a great deal of earnestness to the remarks of Dr. Price on this question. He comes rich in that experience of suffering that makes men wise. I therefore attach great weight to his words. I could, however, but think that while the doctor is entirely right in his opinions, he may have for-

gotten the lectures given at the time he graduated. I have heard the professor of surgery say, and have seen him demonstrate, that the point of election for amputation of the leg was three finger's space below the tubercle of the tibia. I think it well to mention this, and while I admit the great advances which have been made in surgery, yet, I think, that we should not cut entirely loose from all that has been done in the past. With reference to what has been said in regard to long stumps, I think that the surgeons of twenty years ago were deluded by the promises of the artificial limb makers. The artificial limb makers made demonstrations before classes in surgery, and led the surgeons to believe that if they had a certain form of stump they could apply the limbs better. They described their wonderful limbs that could almost walk without a man attached to them, and thus to a certain extent deceived the surgeon.

DR. O. H. ALLIS: I would ask Dr. Price if in a case of injury to the foot, he would take off the limb, say at the tarso-metatarsal joint, or go to the point of election below the knee?

DR. M. PRICE: I should prefer to operate at the point of election. I think that even in an injury which would require amputation of the great toe, the patient would be more comfortable and walk better if the limb were taken off below the knee, although I do not say that I should do it.

(*To be concluded.*)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR REGULAR CORRESPONDENT.)

Progressive Muscular Atrophy—Tumor of the Cerebellum—The Pathology of Spasm—Death of Dr. John C. Dalton—The Middleton Goldsmith Lecture.

Dr. Landon Carter Gray, who has recently been elected Chairman of the Section on Neurology of the Academy of Medicine, presented at the last meeting of the Section a remarkable case of *Progressive Muscular Atrophy*. It was an instance of the so-called *juvenile type* of this affection, as described by Erb, of Heidelburg, in 1884, and he said it was the finest case—indeed the only pure case—that he had ever seen. The limitation of the atrophy and hypertrophy was exactly as described by Erb. He believed that this was the first case that had been described in this country, although a case of Dr. Putzell's, given in the "Reference Note-book of the Medical Sciences," was very closely akin to this type; differing, however, in the distribution of the atrophy, in the presence of marked sensory symptoms, and in the onset of the disease with slight cerebral symptoms. Dr. Gray did not hesitate to say that he had but little faith in this matter of type-making, because of the failures of the predecessors of Erb in this line, viz.: Hemptenmacher, Eichhorst, Zimmerlin, Leyden, Moebius, and others. He then went on to speak at some length of his reasons for believing that this type often merges into others.

Dr. J. Arthur Booth then read a report, illustrated with drawings, of a most interesting case of *Tumor of the Cerebellum*. It was a case which he saw in consultation, the patient being a girl 10 years of age, and one instructive point about it was that at first the diagnosis of tubercular meningitis was made. Tumor of the cerebellum was considered, but the absence of optic nerve changes and the presence of an elevated temperature with irregular pulse seemed to indicate the disease mentioned.

When 3 years old the girl had a fall down a flight of steps, striking her head on the stone walk, and the earlier symptoms of her last illness, which began nine or ten months before her death, consisted of loss of flesh, indisposition to exertion, irritability of temper, attacks of headache and vomiting, and more or less pain in the back part of the head and neck, principally on first waking in the morning. It was also noticed that she carried her head as though the neck was somewhat stiff. When first examined by Dr. Booth, about six months before her death, she was found to be dull, listless, very weak, and suffering from severe head pain. There was marked sensitiveness to touch all over the head, and especially just below the occiput, and the posterior cervical glands were quite large. Vision was apparently normal and there were no changes shown in the fundus by the ophthalmascope, while the temperature was 105.6 and the pulse was irregular.

Within a week, however, commencing optic neuritis was detected, and shortly after this the patient was attacked with convulsions, which recurred five or six times a day. These consisted of tonic spasm of the limbs and drawing up of the right side of the lip and nose; the right eye being tightly closed and the left wide open. Consciousness, however, was rarely entirely lost. The symptoms were now regarded as pointing to the presence of intracranial, and probably cerebellar, growth, and the patient's condition gradually worse until about a month and a half before her death, when she became totally blind and the opthalmascope showed advanced atrophy of both optic nerves. At this time she lay most of the time in a semi-comatose state and had occasional attacks of *petit mal*. There was now paralysis of right side of face, partial paraplegia, and paresis of the left arm, and the following bullar symptoms had also appeared: impaired articulation, difficult deglutition, and polyemia. There

had been for some time a gradual enlargement of the head, and during the last two or three weeks of life some separation of the coronal sutures was noticed.

At the autopsy the whole head was found very much enlarged, and the frontal and parietal bones were very thin and separated at the sutures to a marked degree. The dura mater was very thick and distended, and on puncturing it a large quantity of clear fluid gushed out. The convolutions were flattened, and the whole brain was pale, flabby and softened. The lateral ventricles were much dilated and contained a large amount of fluid; while the medulla was compressed and softened. Directly between the lateral lobes of the cerebellum there was found a large nodular growth, 3 inches long, 1¼ inches wide, and 1¼ inches in its vertical diameter. It was attached to the right lobe, occupying quite an extensive hollowed-out space in the lobe, and also extended into the fourth ventricle, pushed the medulla to the left, and pressed upon the right crus of the cerebellum. The microscopic examination of the tumor showed a large number of spindle cells, medium in size, imbedded in an abundant granular and fibrillated stroma, with a rich vascular supply. The walls, being composed of embryonic tissue, were quite thick, and gave the growth the appearance of angio-sarcoma.

The principal paper of the evening was by Dr. Graeme M. Hammond, on *The Pathology of Spasm*. On this occasion he treated of spasm of cerebral origin and due only to undoubted organic lesion; reserving the consideration of the subject of spasm in all its details for a subsequent paper which he has in contemplation. Having remarked that the only two forms which we could recognize at the present day were tonic, or spastic spasm, and that known as clonic, or mobile spasm, in which the muscles are either the seat of regular or rhythmic contractions (tremor), or are affected with incoördinate, irregular movements, variously designated as chorea, athetosis, and ataxia, he said that in regard to the seat of the pathological lesion in the former, all the authorities were agreed, viz.: that it must be in the white conducting fibres of the motor tract. In regard to the situations of the pathological lesions of mobile spasms, however, the authorities were more or less at variance in their opinions; and having referred to the views of Demarge, Sharkey, Kohler and Pick, Stephan, Charcot, Nothnagel, and others, he said that it was in the hope of throwing a little more light on a subject thus clouded in obscurity that he had undertaken the present investigation.

After some preliminary remarks on the selection of cases he took up each variety of mobile spasm separately, commencing with paralysis agitans. In considering this affection, as all the other varieties of this form of spasm, except that due to disseminated sclerosis, he said that he had carefully excluded all those cases in which the lesions were so extensive as to make the cause of the spasm a matter of doubt. He then described the lesions found after death in various cases reported by Demarge, Hamilton, Parkinson, Oppolzer and others, and went on to say that of other cases of paralysis agitans which he had found recorded with autopsies, in some no lesion whatever could be detected, while in others multiple lesions were observed occupying the central ganglia, internal capsule, pons and spinal cord.

In disseminated cerebral sclerosis he said it was very difficult, from the very multiple nature of the disease, to find cases where the symptoms of tremor on voluntary motion only could be attributed to an isolated lesion; yet a few cases of this description were on record. Having referred to cases by Demarge, Gray and Sharkey, he mentioned one of his own, not yet reported, in which the patient began to notice that the left hand was gradually becoming weak and anæsthetic. Shortly afterwards tremor was observed whenever he attempted to use the arm, and these symptoms slowly increased until, in about a year's time, the arm became useless from paresis, anæsthesia and tremor. The patient died of pneumonia, and the autopsy revealed a spot of softness in the posterior-internal portion of the optic thalamus. Many cases, he said, had been observed of lesions scattered throughout the white matter of the brain, without involving the cortex or basal ganglia; but in all these either there had been no tremor present, or else the lesions involved the cell area of the pons.

In regard to the pathological anatomy of athetosis Dr. Hammond stated that he had seen no reason to change the views expressed in his paper on that subject read two years ago before the New York Neurological Society, in which he reported nine cases of athetosis with autopsies. In three the lesions were confined to the corpus striatum, and in two to the optic thalamus. In three cases both these ganglia were involved, and in two the lesion was in the cortex, in the motor region. To these cases three more, collected by Stephan, could be added. In the first two there was softening in the optic thalamus, and in the third the lesion involved both the thalamus and the posterior part of the internal capsule. Similar lesions had been observed in chorea of cerebral origin, either pre- or post-hemiplegic. Mitchell reported two cases in which the lesion was found in the corpus striatum on the opposite side, and Charcot three cases, in the first of which the lesion was situated in the posterior extremity of the optic thalamus, while in the second and third the posterior part of the caudate nucleus and the posterior part of the internal capsule were involved. Similar cases had been reported by Demarge, Reymond, Stephan and others.

The pathological anatomy of cerebral ataxia was in no wise different from that observed in athetosis and chorea. Gower reported a case in which the lesion was found in the left optic thalamus, and Demarge five cases in which the lesions were in the left lenticular nucleus, optic thalamus, and internal capsule, and in the right optic thalamus. Other cases, reported by Reymond, Charcot and others, only added to the number of cases without indicating any other situations of lesions.

Taking these cases together, he said, it could readily be seen that in all of them, without exception, the lesions were found constantly in three areas, viz.: the cortex, the optic thalamus, and the corpus striatum. In a careful examination of all cases it would also be found that when the anterior two-thirds of the internal capsule were involved spastic spasm was invariably present. In a case of Sharkey's, classified under the heading of disseminated sclerosis, which, beginning with tremor on one side, soon passed into a condition of spastic spasm, while a gradual onset of tremor occurred in the other side, both optic thalami were found involved, but only one internal capsule. Sharkey regarded all the symptoms as attributable to invasion of the internal capsule; but Dr. Hammond was of the opinion that only the spastic spasm, which was confined to one side, had been produced by the lesion in the internal capsule, while the bilateral tremors were due to the implication of the optic thalami.

In conclusion, he said that from a study of these cases he could not agree with Demarge and Sharkey that mobile spasm may be due to irritation of any part of the motor tract, nor with Stephan that the lesion is in the optic thalamus, nor with Charcot that it is in the thalamus and, in addition, the posterior third of the internal capsule; but he believes that it may be produced by any lesion of an irritative nature situated in any part of the brain where nerve cells are located. These cells being located in the cortex, optic thalamus, corpus striatum and pons, the difference in the form of the spasm, he thought, was one of degree, and not one depending on the location of the lesion; and it was impossible, therefore, to differentiate between a lesion of the cortex, optic thalamus and corpus striatum.

The intelligence of the death of Dr. John C. Dalton, whose achievements as a physiologist have done so much to make American scientific medicine honored abroad, will be received with sincere regret throughout the civilized world; and the New York College of Physicians and Surgeons is to be especially commiserated on having lost from its Faculty within the space of a few months three men so preëminent in their respective departments as Dalton, Sands and Agnew. Professor Dalton had not been engaged in teaching since 1883, when he resigned the chair of Physiology, which he had held since 1855, to accept the Presidency of the College; but his services to the institution with which he had been so long identified have been of the highest possible value during the important time of the erection and fitting up of its present magnificent building and the arrangement of its improved courses of study.

The Middleton Goldsmith Lecture for 1889 was delivered, under the auspices of the New York Pathological Society, in the hall of the Academy of Medicine, February 16, by Reginald H. Fitz, M.D., of Boston, Shattuch Professor of Pathology in the Harvard Medical School; his subject being: "Acute Pancreatitis, with an especial consideration of Pancreatic Hæmorrhage, Hæmorrhagic Pancreatitis, and Subperitoneal Fat Necrosis." It is gratifying to learn that the Pathological Society has been generously provided by the College of Physicians and Surgeons with suitable quarters and a permanent home in the new buildings of the College. P. B. P.

Transactions of the Ninth International Medical Congress.

Dear Sir:—There are a number of volumes of the Transactions of the Ninth International Medical Congress on hand, belonging to members who have omitted to notify me of their change of address. On being notified of their present address, the volumes will be sent by express. Very truly yours, JOHN B. HAMILTON.

ASSOCIATION ITEMS.

Section on State Medicine.

The following named gentlemen have promised papers for presentation to the Section on State Medicine at the Newport meeting of the Association:

Dr. N. S. Davis, Chicago, Ill., "The American Medical Association and its Relations to the Public Health."

Dr. F. L. Sim, Memphis, Tenn., "Etiological Relations of Water to Disease."

Dr. H. R. Storer, Newport, R. I., "Volunteer Sanitary Organizations as an Aid to Public Boards of Health."

Dr. W. C. Van Bibber, Baltimore, Md., "Quarantine of the Future."

Dr. John B. Hamilton, Surgeon-General U. S. Marine-Hospital Service; Dr. Henry B. Baker, Lansing, Mich.; Dr. Victor C. Vaughan, Ann Arbor, Mich.; Dr. Oscar C. DeWolf, Chicago, Ill.; Dr. Thos. C. Minor, Cincinnati, O.; Dr. J. R. Briggs, Dallas, Tex.; Dr. Wm. Cabell Rives, Newport, R. I.; have promised papers the subjects of which will be announced later.

It is requested that all gentlemen who intend

to present papers send the titles thereof, together with their name and address to the undersigned.

S. T. ARMSTRONG,
Secretary Section on State Medicine.

U. S. Marine-Hospital Service, New York City, N. Y.

MISCELLANY.

THE COLLEGE OF PHYSICIANS OF PHILADELPHIA announces that the first triennial prize of two hundred and fifty dollars under the deed of Mrs. Wm. F. Jenks, has been awarded by the Prize Committee of the College of Physicians of Philadelphia to John Strahan, M.D., M.Ch., M.A.O. (Royal University, Ireland), 247 North Queen Street, Belfast, Ireland, for the best essay on "The Diagnosis and Treatment of Extra-Uterine Pregnancy." The writers of the unsuccessful essays can have them returned to any address they may name, by sending it and the motto which distinguished the essay to the Chairman of the Prize Committee, Elwood Wilson, M.D., College of Physicians, Philadelphia. The Trustees have made arrangements with Messrs. P. Blakiston, Son & Co., 1012 Walnut St., Philadelphia, for the publication of the successful essay, which will also appear in the Transactions of the College for 1890.

LETTERS RECEIVED.

N. D. Gaddy, M.D., North Vernon, Ind.; G. Minges, M.D., Dubuque, Ia.; Lambert Pharmacal Co., St. Louis, Mo.; R. J. Dunglison, M.D., Philadelphia; Pa.; P. O. Hooper, M.D., Little Rock, Ark.; F. H. Allen, M.D., Haverhill, Mass.; Wm. C. Woodward, Washington, D.C.; Parke, Davis & Co., Detroit, Mich.; L. C. Moore, M.D., Blue Grass, Ia.; Battle & Co., St. Louis, Mo.; Thos. Leeming & Co., New York; G. F. Cook, M.D., Oxford, O.; Perfection Douche, Albany, N. Y.; Julia B. de Forest, New York; Lehn & Fink, New York; Geo. P. Rowell & Co., New York; A. B. Younkman, M.D., Brenen, Ind.; N. Roe Bradner, M.D., Burlington, N. J.; D. W. Bland, M.D., Pottsville, Pa.; J. H. Eskridge, M.D., Chicago, Ill.; Cyrus Kindreck, M.D., Litchfield Corners, Me.; P. Blakiston, Son & Co., Philadelphia, Pa.; O. C. Franke, M.D., New York; Carl L. Jensen Co., New York. Kent K. Wheelock, M.D., Ft. Wayne, Ind.; H. W. Loel, St. Joseph, Mo., John J. Miller, M.D., Wellston, Mo.; Reed & Carnrick, New York; J. P. Elliott, M.D., 49 Chambers St., Boston, Mass.; John A. Larrabee, M.D., Louisville, Ky.; John S. Coleman, M.D., Augusta, Ga.; E. F. Wilson, M.D., Columbus, O.; A. M. Crane, M.D., Marion, O.; H. T. Bahnsom, M.D., Salem, N. C.; Kenyon News Agency, Chicago, Ill.; R. Harvey Reed, M.D., Mansfield, O.; Edmund Andrews, M.D., Chicago; I. Halderstein, New York; J. J. Conner, M.D., Pana, Ill.; C. W. Driesbach, Cleveland, O.; W. D. DeLong, M.D., Pikesville, Pa.; S. N. Nelson, M.D., Boston, Mass.; Dr. Woodruff, London, Ont.; M. Northrup, M.D., Port Huron, Mich.; Chas. W. Hitchcock, M.D., Detroit, Mich.; Chas. F. Mason, Harvard University; W. H. Wenning, M.D., Cincinnati, O.; W. J. Conklin, M.D., Dayton, O.; J. W. Gleitsmann, M.D., New York; Mutual Life Insurance Co. of New York; J. G. Carpenter, M.D., Stanford, Ky.; Wm. D. McGowan, Lyconier, Pa.; J. F. McKnight, M.D., Walnut Hill, Ark.; W. C. Wile, M.D., Danbury, Conn.; Union Pacific Railway Co.; P. H. Millard, M.D., St. Paul, Minn.; E. H. M. Sell, M.D., Allentown, Pa.; J. D. Munson, M.D., Traverse City, Mich.; W. N. Yates, M.D., Cincinnati, Ark.; L. H. Dunning, M.D., South Bend, Ind.; D. C. English, M.D., New Brunswick, N. J.; J. R. McDill, Milwaukee, Wis.; J. F. Preston, M.D., Decorah, Ia.; S. Solis-Cohen, M.D., Philadelphia; Scott & Bowne, New York.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 16, 1889, to February 22, 1889.

Major J. V. Lauderdale, Surgeon U. S. Army, is granted leave of absence for one month, to take effect between March 1 and 15 next. Par. 2, S. O. 9, Hdqrs. Dept. of Texas, San Antonio, February 15, 1889.

By direction of the Secretary of War, Capt. Fred. C. Ainsworth, Asst. Surgeon, will proceed to New York City and Brooklyn, N. Y., on public business. Par. 15, S. O. 38, A. G. O., Washington, February 14, 1889.

By direction of the President, Capt. Robert W. Shufeldt, Asst. Surgeon, will proceed to Ft. Leavenworth, Kan., and report in person to Brig.-Gen. Wesley Merritt, President of the Army Retiring Board at that place, for re-examination by the Board, and on the conclusion of his examination will return to this city. Par. 13, S. O. 40, A. G. O., Washington, D. C., February 16, 1889.

By direction of the Secretary of War, Capt. James E. Pilcher, Asst. Surgeon, will repair from Ft. Wood, New York Harbor, to Philadelphia, Pa., on or about February 23, 1889, for the purpose of giving instruction to the hospital corps of the First Brigade National Guards of Pennsylvania. On completion of this duty will return to his proper station. Par. 1, S. O. 4, A. G. O., February 18, 1889.

First Lieut. Henry S. T. Harris, Asst. Surgeon U. S. Army, will proceed to Ft. Davis, Texas, so as to arrive there on or before February 25, and report to the commanding officer thereof for temporary duty. Upon return of Surgeon Lauderdale from leave of absence, Asst. Surgeon Harris will return to the Post of San Antonio. Par. 3, S. O. 9, Hdqrs. Dept. of Texas, San Antonio, February 15, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending February 23, 1889.

P. A. Surgeon P. M. Rixey, promoted to Surgeon November 27, 1888.

Surgeon Geo. P. Bradily, ordered to hold himself in readiness for duty about March 1 to "Mohican."

Asst. Surgeon Geo. A. Lung, ordered to hold himself in readiness for duty about March 1 to "Mohican."

P. A. Surgeon H. T. Percy, detached from Naval Hospital, Washington, and to the coast survey str. "Patterson."

P. A. Surgeon Robt. Whiting, detached from coast survey Str. "Patterson," proceed home and wait orders.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Four Weeks Ending February 23, 1889.

Surgeon H. W. Austin, to proceed to Green Bay, Wis., as inspector. February 9, 1889.

P. A. Surgeon John Guitéras, granted leave of absence for sixty days, with permission to go abroad. February 13, 1889.

P. A. Surgeon W. A. Wheeler, order to proceed to Cleveland, O., revoked. February 9, 1889.

P. A. Surgeon S. C. Devan, to proceed to Charleston, S. C., Savannah, Ga., and South Atlantic Quarantine Station, as inspector. February 9, 1889.

P. A. Surgeon Eugene Wasdin, to proceed to Charleston, S. C., and assume charge of the Service. February 23, 1889.

DEATH.

P. A. Surgeon F. M. Urquhart, died at Evansville, Ind., February 14, 1889.

CORRIGENDA.

In THE JOURNAL of February 16, p. 289, for "Drs. G. T. and G. S." read *Drs. J. T. and J. S. Carpenter.* The author of the communication was not Dr. D. W. Beard, but Dr. D. W. Bland, of Pottsville, Pa.